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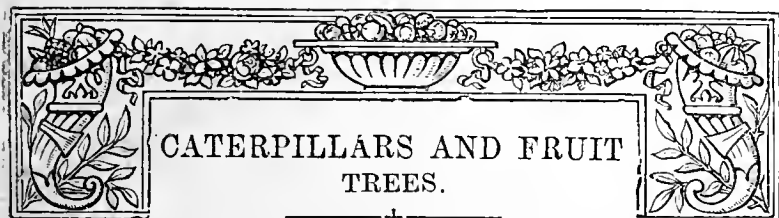
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ROYAL GARDENS KEW.



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CATERPILLARS AND FRUIT TREES.

THE alarming irruption of caterpillars, which has apparently done so large an amount of damage to our fruit crops this year, naturally calls for investigation as to its causes and possible remedies. It is all the more singular in its occurrence, because just at this time there has been much discussion upon fruit growing in England as a source of profit, and the experiences of the present summer cannot be said to be by any means encouraging. At this moment, however, the fruit trees about North Kent seem to be suffering more from an attack made upon them by swarms of aphids or fly than from the work of caterpillars, but doubtless these have rendered the trees less capable of withstanding the exhausting influence of the prolific sucking insects. Though the caterpillars have not quite gone the greater part have vanished; some of course have been killed and some have reached maturity, spinning their cocoons, or entering the soil to become chrysalids.

On investigating the matter there are three things which must be borne in mind at the outset. The first, of primary importance, was pointed out some weeks ago by a correspondent of this Journal—namely, that it was probable 1889 would not be a good fruit year, as a large number of the trees had suffered from the ungenial weather which characterised the summer of 1888. Secondly, that although it is now agreed that insects will attack trees perfectly healthy, still, should there be any unsoundness, the harm done by the insects is intensified. And, thirdly, that in many places the trees suffered considerably from caterpillars during May and June last year, and those now complained of, being their progeny, are descended from eggs deposited last summer and autumn, not during the present season. Probably rather too much effect has been attributed to the caterpillars, the falling off in the yield of fruit which seems all but certain generally, arising from a combination of causes. The abundance of caterpillars, however, was a palpable fact, yet showing a singular capriciousness, even in the space of a few hundred yards, for which no doubt there is an explanation, though we cannot discover it.

Here is an important fact as bearing upon the appearance of these caterpillar swarms in our gardens and orchards, that plants outside gardens, and apt to be infested by the same species, have had less than the average upon them. As instances, I may name the Sloe, Dog Rose, Whitethorn, and to some extent, the Elm. Again, the fact is well known that of the hosts of caterpillars emerging into daylight during our variable spring, the majority are, in most years, destroyed by the winds or rains of April and May. The spring of 1889 was on the whole favourable to caterpillar life, and the much-complained-of easterly wind, if unpleasant to man and blighting to vegetation, does some good work which we missed this year. Several of my friends have suggested that the common practice of allowing grass to grow round the trunks of the trees in our Kentish orchards favours the increase of caterpillars, but I cannot see the connection, except in this way, that it is of advantage to disturb the surface soil about the trees when we notice the presence of caterpillars which enter the earth to undergo transformation. A friend, who is an observer of the habits of birds, tells me that he thinks the insect-eating birds have either been fewer in numbers or less diligent than usual. I remarked to him that some of the species that have been abundant are hairy, therefore seldom touched by birds. This is certainly true of the lackey cater-

pillar and the brown tail, as I think of the ermine species. So much has been written unfavourable to the house sparrow, that I am glad to report this bird has been seen picking off by hundreds the caterpillar of the winter moth (*Cheimatobia brumata*).

From the reports that have been published, and from my own observations, I conclude that this has been the caterpillar which has done the greatest amount of mischief, its attack upon the trees having been made while the buds were beginning to expand, and the insect being also in unusual abundance. It has attacked all fruit trees alike, and the numerous webs have an evil effect, as well as the incessant work of the caterpillar's jaws. The late Edward Newman showed us long ago that of all the remedies for this pest nothing is better than a circle of some sticky substance drawn round the trees, which the female moths, when they begin to crawl up the trunks on their emergence, find themselves unable to pass, being wingless. I have seen the moths by hundreds thus trapped by a tarry compound, which, of course, means the extinction of many thousands of eggs. An odd thing in 1889 is that this capital preventive is said to have failed in some instances, the caterpillars appearing numerous where the trees had thus been treated during the autumn. There are two ways in which this might be explained. It is possible that the process of tree-daubing may have been done too late, the moths being out soon, and having ascended the trunks before this precaution was taken. Or it may be that a portion of the brood remain sometimes in the chrysalis state on the trees, but I must confess I have never seen an instance, having always found the caterpillars burying themselves in the earth when full grown. Then, again, some gardeners speak of finding eggs of the winter moths at the tops of twigs, a position in which the wingless female scarcely ever places them, and I imagine these must be the eggs of another species.

Next in abundance, I think, to the caterpillar of the winter moth has been that of the lackey (*Bombyx neustria*), which is yet about, and now in its solitary stage of life. This insect hatches out later than the preceding, and it has been recommended to search for and clear away its rings of eggs, which remain in the branches and twigs from autumn to spring. According to Mr. Wood, the name should be "lacquer" moth, from the glossy appearance of these necklets of eggs. There should not be any difficulty in removing from fruit trees the bulk of these caterpillars while they are juvenile, as they begin life by feeding upon the lower branches, and the webs or nests are conspicuous, being usually studded over with numerous cast-off-skins. This caterpillar is recognisable by its stripes of blue, red, yellow, and white, and its brown head with two black spots, which might pass for eyes, but are not these organs. The lackey caterpillar spins a cocoon in June, and the moth appears soon after. It has occurred principally upon the Apple, giving this the preference over other fruit trees, and I have also taken off the Apple a few examples of the bluish white spotted caterpillar of the figure-of-8 moth, but it has done no particular harm, though on the Continent it is noted as a frequent feeder upon the Peach and Apricot; its increase, however, is to some extent checked by birds, to whom its plump form is attractive. Two of the ermines (*Yponomeuta padella* and *malivorella*) have disfigured the trees with their webs, their colonies being very numerous in some places; these have attacked the Apple, Plum, and Cherry. Last year gave us warning that these two species were likely to be troublesome another season unless means were taken to diminish the spring brood, but in many orchards this was left undisturbed, and not only the leaf buds, but the fruit buds also, have been so severely attacked that it is likely the result will be the death of some young trees and the exhaustion of older trees, beside the loss of fruit. I have discovered some caterpillars of the brown tail (*Liparis chrysorrhæa*), and should be glad to hear from anyone who has noticed these during this season; it is a species that was formerly very injurious, but has not troubled our orchards of late years. It is a caterpillar sufficiently distinct to be easily recognised,

having on a ground colour of black, scarlet warts, and white tufts of hair.

There has been great diversity of opinion as the best mode of dealing with these caterpillars. The slow and simple plan of removing them by hand has its advantages, though manifestly inapplicable to tall trees, and too expensive for large orchards. Those caterpillars that are more or less coated with hairs disregard some washes, but they are not insensible to a wash containing soap and petroleum. One grower of fruit tells me he was very successful in killing his enemies by the application of dry sulphur. The process of dusting the trees is, however, somewhat tedious and expensive. Another said to me, "I have been shooting my caterpillars," a statement which seemed rather astonishing. I have read, I think, of a gentleman who used to go into his orchard and amuse himself by picking out an Apple or Pear on a branch a good distance off, and aim at it to bring it down, but caterpillar shooting I never heard of before. On inquiry, I found the plan was to fire blank cartridges into the trees, which I am assured brought down the caterpillars in shoals, when they could be easily cleared away; my friend was obliged to admit that it was not exactly a wholesome process for the trees just at that season.—ENTOMOLOGIST.

LATHYRUS SIBTHORPI.

ALTHOUGH this hardy herbaceous plant has probably been in cultivation in England for nearly a century, it is surprising that, considering its attractiveness, it has not been generally grown. The period of its flowering and its neat habit of growth, together with the profusion with which its richly coloured blooms are produced, would not fail to please even the most fastidious. In years when late spring frosts prevail it may have its first flowers destroyed, but as the season advances and more genial weather is experienced this *Lathyrus* soon presents its customary pretty appearance, and maintains it until the month of June is sometimes far advanced. It being necessary to give the plant support, and as it seldom attains a height of much more than 3 feet, ordinary Pea sticks may be used for this purpose, and by putting them around the clumps early in the year some protection from frost is thereby provided, and a double purpose served. To describe the flowers as being richly coloured magenta-red does not fully depict the exceptional colour they attain in their various stages of development. There is nothing in dyed dress fabrics that is identical in tone of colour, and in the silk pattern tints it may be sought for in vain. It is remarkable, too, that those generally credited with being conversant with colours hesitate before pronouncing an opinion. This is occasioned by the degree of light or shade in which the flowers may be placed when viewed, as well as their age, state of expansion, and position. The standard of the flower is of magenta-cerise, passing to rosy-lilac; the wings are more fully coloured with a tinge of carmine, excepting at their base, which is much paler, as is the keel. Frequently as many as nine or ten blossoms are borne in a well-disposed bunch on flower stalks sufficiently long to admit of their being available for the purposes for which cut flowers are mostly prized.

The plant received its specific name in honour of Dr. Sibthorp, a native of Oxford, who was Professor of botany in that University from 1784 to 1795. It is probably this plant that is figured in the second series of Sweet's "British Flower Garden," fol. 333, under the name of *L. rotundifolius* var. *ellipticus*. The plate, however, fails to represent the flowers in their true colours, but the interesting statement is made in the letterpress that "Marschall von Bieberstein gathered it on Mount Beschtan in Georgia." In Maund's "Botanic Garden," vol. v., plate 128, fol. 511, under the name of *L. rotundifolius* this may be the one figured and referred to, but the portrayal of the plant is again defective. It is here described as "a free-flowering perennial species, which is very little known (1834-5), nor is it quite certain through what channel it was introduced to this country. It has long been cultivated in the Oxford Botanic Garden, and there is much reason for supposing that it may have been originally introduced by Dr. Sibthorp." In the "Wiener Illustrirte Garten-Zeitung," 1888, it is mentioned as a new plant; it has, however, been preserved at Oxford from the date of its introduction.—S.

VINES AND VINERIES.

In many gardening establishments Grapes are grown and expected to be well produced in houses unworthy of the term vinery; but men of tact and resource, even under very favourable conditions, grow excellent

crops of Grapes that are creditable in a greater degree than when conditions of the most favourable kind are provided. Light and well-ventilated vineries are a desideratum with all gardeners, but unfortunately in numerous instances they are not to be found even in the gardens of the wealthy. Grapes, above all fruits, appear to create enthusiasm among their owners and gardeners, but this is more noteworthy in districts where gardens are numerous and situate within a radius allowing of visiting and revisiting among employed and employers alike. This is where the inequalities of circumstances occur, and it is with envy that the ill-provisioned looks upon his better-to-do opponent. Living within the environs of Frome are houses of the wealthiest business men, with their more or less well appointed gardens, while extending to a much greater radius are the residences of county families. The latter places are often held as an example for townsmen to imitate, but this can only be done of course on a restricted principle, as means and space do not allow the carrying out of their ideas to a large extent. For instance, the vineries of the upper classes are, during the Grape-growing season, given up almost or exclusively to that crop, while with the smaller grower a vinery has to serve as a plant house as well, summer and winter.

In writing of Vines and vineries, I am tempted to mention the excellent condition of some Vines and crop. The vineries are the result of local enterprise, and highly commendable to the proprietor, Captain Tucker, Keyford House, Frome, and the culture to his gardener, Mr. Bull. In this garden is an example of mechanical skill, accompanied by good results in garden produce. Of the several houses two are devoted to Grapes, which I have not seen equalled this season in any establishment of moderate dimensions. The Vines are in every instance characterised by vigorous yet short-jointed growth, the bunches being much above the average in size, and if a good finish is secured they will be of sufficient quality to do credit to the grower on any exhibition table. Foster's Seedling is represented by very fine clusters, more resembling the Muscat of Alexandria in size of berry, and the examples of this latter sort, as well as the popular Madresfield Court, are very fine. Alicante and Gros Colman are good, while two out of the several bunches of that generally discarded Grape, Muscat Hamburgh, are among the best I have seen for a very long time. In constitution there is evidently a weakness in the Muscat Hamburgh, as this Vine was the only one that showed any signs of sun-scalding in the leaves, although these were, like the others, remarkable for size and strength.

The borders, I am told, are only 2 feet in depth, which necessitates frequent watering, and although the Vines are in such a satisfactory state no stimulant of any kind has been given this season, this speaking well for the quality of the soil, which is dug from an orchard adjoining the garden. What a boon it would be to thousands if such material could be procured so close home!

The houses were built under the owner's supervision, and are, as I said previously, highly commendable to him, for no expense was spared in building and providing convenient means for ventilating; and it is a misfortune that others do not adopt the same measures, the labour saved in the adoption of efficient lever ventilation over the single light method is considerable. The houses are heated by two tubular boilers connected, so that in the event of sharp weather they can both be applied at the same time, this being found more economical than if one only is used and subjected to hard forcing. Mr. Bull informed me that if severe weather prevails the requisite heat can be maintained by applying both boilers with the dampers closed. This is an item worthy of a more general adoption, as apart from economy there is relief in the fact that the boilers are not subjected to any strain, consequently a break-down is not in any way anticipated. The vineries in this range are lean-to's, and the plant structures span-roofed, and it would be difficult to imagine anything more convenient in every item.—W. S., Frome.



AERIDES.

IMPORTED plants are invariably established in pots, and beginners succeed well with them for a time. But after they need larger pots the plants often assume an unhealthy appearance, principally by crowding the roots and placing about them too much material. They can, however, be well grown in pots, but some experience is needed in selecting varieties suitable for this mode of culture. Some, of which *A. virens* may be given as an example, root so profusely and in such a manner that the roots are with difficulty induced to enter the material provided as a medium for them. *A. crispum* and *A. Lobbi* root in a totally different manner, and can be much more easily managed in pots; but in spite of this they are better in baskets than pots, for they delight in exposing their fleshy roots in the moist shady atmosphere with which they should be provided during the growing season. The roots of *A. virens* will often go straight through the basket in which it is grown and extend fully 4 feet below it. Plants

2 to 3 feet high have 60 to 70 feet of roots below the basket and are very healthy, while not a single root is to be found in the moss provided for sustaining moisture about the plants. The roots extend and branch freely in the atmosphere, and the plants flower well. If the roots of this variety and others of the same habit of growth are confined in pots they would quickly decay and the plants become unhealthy. The others represent those that make less but more fleshy roots and cling tenaciously to the basket, and the charcoal and moss in it soon becomes a mass of roots. Whether grown in pots or baskets make no attempt to force the plants to root only in the pot or basket. Very little material as a rooting medium is needed, and that should be composed of charcoal in lumps and sphagnum moss on the surface, which should be annually removed.

DENDROBIUM WARDIANUM.

Although this Orchid requires more shade than the majority of Dendrobiums it must not be overshadowed nor grown in too moist an atmosphere. Under these conditions pseudo-bulbs of a greater length are produced, but they lack the solidity necessary to insure a profusion of fine flowers. Pseudo-bulbs produced under such conditions seldom ripen satisfactorily, and they frequently display signs of damping during the period of rest. They succeed admirably in ainery where the roof is not overshadowed with foliage and where liberal supplies of air are admitted. By this method of culture the pseudo-bulbs are short-jointed and are solidified as they are made. Directly they show signs of having lengthened out their growth, which is easily detected by a small leaf at the extremity of the pseudo-bulb, they should have a cooler, drier, and more airy position. It is important that the change in their treatment be gradual and continued until they have lost their foliage and are perfectly firm. After the growth has lengthened one of the greatest mistakes that can be made in their culture is to suddenly withhold water and force them prematurely to rest. Although *D. Wardianum* requires liberal supplies of water during the growing season the plants must not have very much in the early stages of growth, or the leaves will decay at their points, as if they had been caught by the sun. The foliage under good treatment should remain healthy until the completion of growth and the process of ripening commences.—ORCHID GROWER.

ROYAL HORTICULTURAL SOCIETY.

JUNE 25TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters, in the chair; Messrs. McLachlan, Morris, Michael, Dr. Müller, and Rev. G. Henslow, Hon. Sec.

Rosa berberidifolia.—Dr. Masters further examined the anatomical structure of the stem and petiole of this exstipulate unifoliate species exhibited at the last meeting, and found that the fibro-vascular cords leading to the normal position of stipules were present, the stipules themselves being quite arrested. He commented upon the importance of extended observations on the anatomical structure of plants from a horticultural point of view, in that, for example, when the water cells are more abundant, the plant appears to be more liable to be attacked by mildew.

The Blight of Caterpillars.—Mr. McLachlan observed on the present superabundance of caterpillars that it is far less serious and much more local than is popularly supposed to be the case, some districts being apparently quite free from any excess. Remarks were made upon the popular errors associated with the vague term "blight," and the difficulty of persuading the unscientific world that plagues of various kinds of destructive animals had nothing whatever to do with atmospheric appearances of haze, &c.

Amorphophallus Titanum.—Dr. Masters exhibited drawings of, and Mr. Morris described this remarkable Aroid now flowering at Kew. It was received from Sumatra ten years ago, having been discovered by Dr. Beccari. The tuber weighed 56 lbs. at the beginning of this year, and grew at the rate of 4 inches a day. The spadix and stem together are 7 feet in height. The spathe was at first closely adpressed to the spadix, but on Friday morning, the 21st, it began to spread, and was fully expanded for one day only. By Saturday morning it again closed round the spadix. Like so many Aroids the odour was most offensive. The male flowers are situated low down in a ring, and doubtless pollinated the females which were below them. Flies were observed at the base, but whether they assisted in the fertilisation or were laying eggs in the spadix could not be determined.

Pyrethrum Attacked by Insects.—Dr. Müller showed specimens of leaves penetrated by a dipterous miner, probably a species of *Phytomyza*. It first appeared on the yellow *Soleil d'Or*, and thence spread to the red varieties. Mr. Morris compared its ravages with those of the *Ceniosoma coffeellum*, which has destroyed plantations in Ceylon and Dominica. The best way to destroy it was to pinch the leaves where the caterpillar was burrowing underneath.

Poa pratensis.—Dr. Masters showed specimens of this species of Grass, which were reported to be covered with a gummy exudation. It did not appear to be present on the dried specimens sent, but it was suggested it might have been honeydew.

Abies Nordmanniana.—Mr. Veitch sent a remarkable branch of this species with a large burr, with spreading branches of a yellowish hue. A discussion was raised as to the general cause or causes of such structures, and whether they were hereditary or could be propagated. The opinion entertained was that they were originally due to the puncture of some insect, but the difficulty lay in observing it at the time. Dr. Masters said he had on one occasion noticed a number of seedlings of Fir trees having such abnormal growths on the Simplon. It was proposed to subject the specimen to microscopic examination, and to test the powers of propagation. Varieties of *Clanbrazilian Firs* are known to be readily propagated which have thus originated.

Urtica dioica, monœcious.—Mr. Henslow exhibited specimens of the female plants of the common Stinging Nettle with male flowers at the extremities only of the female branches of the panicles, corroborating the generally received view that the occurrence of male organs is correlated with a reduced vigour.

LILIUM TENUIFOLIUM.

THE accompanying illustration (fig. 1), represents one of the most charming of all the Martagon group of *Liliums*. Its slender stem,



FIG. 1.—LILIUM TENUIFOLIUM.

never growing more than 13 inches high, is clothed to the ground with narrow leaves, and the flowers, which are bright scarlet, are about 1½ inch long. It is a wonder we do not more often see this bright coloured little gem. Like most of this group, *L. tenuifolium* does best planted out. A moist situation should be chosen, and if grown amongst some dwarf shrubs where it will get a little shelter in the early spring so much the better, as it is one of the earliest to bloom. It thrives best

in peat, and should be planted about 4 inches deep as soon as the bulbs can be procured in the autumn.—G.

NOTES ON HARDY FRUIT.

APPLES.—In but few instances will it be necessary to thin out the crops on trained trees. Most of the Codlin family, however, including Keswick, Carlisle, and Lord Suffield, are bearing freely, and these where at all thick ought to be lightly thinned, more, however, being gathered when the fruits are near the size of large Walnuts, at which age they can be used for cooking purposes. Any pyramid small standard and bush trees that have formed much growth should have this lightly thinned out, and if the trees are sufficiently fruitful the reserved shoots may be shortened back to a length of 9 or 12 inches, or according to their vigour. Vigorous trained trees closely pruned are rarely fruitful, and the simplest, as well as the best method of correcting this habit, is to leave a number of well-placed branches all over the tree unpruned both now and at the winter pruning. In most instances these will ripen well and form fruit buds at nearly every joint during the following summer. Espaliers, cordons, and fan-shaped trained trees should have foreright shoots shortened to about 6 inches in length, or rather less if at all weak. The leading shoots to be preserved to their full length and properly laid in.

PEARS.—The crops on wall trees are partial, and not much thinning out appears to be needed anywhere. Nor are many of the trees clear of walls heavily laden with fruit, large quantities being much injured by caterpillars. All well-established trees are growing vigorously, and the summer pruning ought now to be completed. These may be treated exactly in the same way as advised in the case of Apples generally. A spell of bright sunshine and clear weather has well hardened the early leading growths, and advantage should be taken of this in southern districts to secure a second pair of branches for young horizontally trained wall trees. Supposing two, and a leader have already been obtained, the latter should be shortened to about 12 inches in length, and from the shoots resulting a fresh leader and two well placed side branches may be laid in. If this is attended to at once the young shoots will have time to mature before the fall of leaf.

PLUMS.—Wall trees generally are bearing excellent crops, and another thinning out must be done at once, or the quality of the crop may be seriously impaired. The thinnings may be utilised for pies, and good preserve can also be made with them. All leading growths ought to be fastened to the walls or trellises, but those of a very rank character should either be cut cleanly out or stopped, a removal of a portion of the leaves also checking this unfortunate habit. Gross shoots unchecked soon disfigure a tree, these robbing their more weakly neighbours, and cause the trees to become unshapely. On some soils Plums frequently lose large branches, though perhaps not so suddenly as might appear to the superficial observer. When the foliage on a large branch assumes a glaucous hue, and no young shoots are formed on it, most probably it will be dead by this time next year. These losses should be anticipated (they cannot be prevented) as much as possible by laying in young shoots now to take their place. More also should be reserved to cover any bare portions of the main branches, and especially ought strong young shoots from near the base of the tree be taken good care of. All superfluous shoots to be pruned to a length of about 5 inches. It is also advisable to thin out branches on pyramid and bush trees; this insures the ripening of the reserved shoots, causes the formation of fruiting spurs, and benefits the fruit that may be hanging on the trees. The Plum aphid is very abundant this season, many trees being smothered by it. The ordinary green and black aphid or fly is also troublesome, and all must be destroyed as quickly as possible. After the trees have been pruned and the branches reserved laid in, all should have a thorough cleansing. A free use for several evenings in succession of either an engine or syringe and soapy water, or soft water well impregnated with soot, will do much towards clearing the trees of such pests. The soot mixes readily with water if first made into a paste, and is both objectionable to the insects and beneficial to the trees. If it is thought necessary to syringe the trees with a decoction of quassia chips, or tobacco water and soft soap, in each case freely diluted with water, it is advisable to syringe this off the fruit with clear water.

PEACHES AND NECTARINES.—Latterly these have made better progress, and most of the trees will perfect good crops. In many cases the fruit ought to be freely thinned out, one fruit to every 6 square inches of wall space being ample, in fact rather more than should be left on weakly trees. Foreright shoots ought to be cut well back, and only a moderate number laid in on the upper side of the fruiting branches. If not unduly crowded these shoots will ripen properly and flower freely next season. Continue removing any curled leaves, and if black fly is prevalent dust the affected points and leaves with tobacco powder. The engine or a syringe should be used on the trees in the evening of every hot day, soot water also being beneficial to these as well as to Plums. If mildew is prevalent coat the affected points with sulphur, and should red spider put in appearance mix sulphur freely with the syringing water. A handful to a three-gallon can is sufficient, and may be best mixed with the water by squeezing it through a muslin bag. It is a curious fact that best fruit always seem to swell close to the nails used with the shreds, and as contact with these is liable to much disfigure or spoil the fruit the nails ought to be shifted before the fruit commences the final swelling. Waterloo promises to be even earlier than the serviceable Hale's Early.

CHERRIES.—Birds are liable to clear off the fruit of these long before they are ripe, therefore complete the pruning, this being done much as advised in the case of Plums and net over early. Green fly and a larger species of black fly are very troublesome among Cherry trees, and these again must be kept down as previously advised if clean fine fruit is desired. As a rule the nets may be taken from the Strawberry beds in time to cover the Morello Cherries, and the latter are not so liable to become so dirty. Seeing the fruit is principally borne on wood formed during the next season, the young shoots must only be thinned out now.—W. IGGULDEN



THE NATIONAL CHRYSANTHEMUM SHOW AT HULL.

THE error in the numbering of some of the classes in the National Society's schedule to which your correspondent, "E. M.," has drawn attention is unfortunate, but any inconvenience will be obviated if intending exhibitors fill in their entries from the Hull Society's schedule, which is quite correct in the numbering of the classes. The National schedule is also not quite correct in the conditions of some of the cups. Here also the Hull schedule is to be taken as correct.—R. F. J.

NATIVE GUANO.

NATIVE guano and sewage are convertible terms, and the disposal of the latter has long been a question of embarrassment to parish authorities. Its right place is undoubtedly on the land, and how best to distribute it with safety to the public health is a subject of great public importance. On the occasion of the opening of the Native Guano Company's works at Kingston for disposing of the sewage of that town and of Surbiton by their A B C process, the Mayor of Kingston (Mr. Alderman East) said that there were two or three ways of disposing of town sewage: (1) By transferring it to their neighbours; (2) by disposing of it on their own land; (3) by running it into the river. To the first course there was the objection that their neighbours usually had sewage of their own to deal with, and would by no means undertake the responsibility of more. To the second, that where town land was scarce and quite close, as it were, to the market place, sewage, for obvious reasons, could only be applied with great caution. To the third, that the river conservators refused its admission until it had been reduced to an inoffensive state. The Corporation had, he said, been embarrassed by this question of sewage disposal for many years, and after the most careful consideration they had come to the conclusion that the Native Guano Company's process of resolving sewage into an easily applicable and inoffensive manure, leaving a harmless effluent to escape into the river, was the best means of solving the difficulty, and had come to an arrangement with them accordingly.

The Worshipful Mayor's remarks were made at a lunch on the works on Saturday last, previous to which a large company of experts had inspected the process from its preliminary to its final stages. The method of converting raw sewage into an odourless fertiliser is ingenious and highly interesting. In the first place, after passing through a grating, it flows into a pump well beneath the main building, and the deodorising mixture is there applied. Centrifugal pumps lift and discharge it into a meter chamber, whence it flows into open channels in the grounds, precipitating agents being applied on the way. These channels conduct it to the settling tanks, which are eight in number. They are 85 feet long by 50 feet wide, and about 8 feet deep, and have a holding capacity of 1,200,000 gallons. The tanks are arranged in pairs, with a dividing wall, which does not, however, extend to the further extremity, but leaves an opening several feet long. Flowing from the channels above referred to into the first tank, the sewage passes through it, settling as it goes, and passes round the end of the wall into the second tank, where further settling takes place, and the surface water flows out through a floating apparatus and escapes into a channel lower down, whence it passes through a covered channel to the river. This effluent is quite clear and odourless.

The deposit left after the surface liquid has escaped is pumped from the tanks into what is known as the sludge well, where further applications are made to it, and from there it is transferred to an upper floor of the main building, and forced by air pressure into filter presses, which press the remaining moisture from it. Removed from the presses, it is thrown into a heap to dry, and then passed through a cylinder into a disintegrator, where it is powdered and passes out ready for use.

When placed in sacks ready for being dispatched for use on farms and gardens the native guano resembles coarse soot, hence is in a form that renders it easily and conveniently applicable to the soil. Many good gardeners speak highly of it, and it is essentially a safe fertiliser for farm and garden crops generally, also for lawns and flower gardens. The process by which the Native Guano Company evolve it from town sewage is entirely inoffensive; in fact, while the works were in full operation on Saturday last, which was a very hot day, no inconvenience was experienced by the visitors who inspected them, much less by the

inhabitants of the adjoining town of Kingston. Here, then, the sewage question is solved in a practical manner, with safety to the public and advantage to the soil. It ought to be considered elsewhere, for millions of pounds are wasted when the greater portion of the sewage of a nation is consigned to the sea.



EVENTS OF THE WEEK.—To-day (Thursday) there will be shows (chiefly Roses) at Bath, Canterbury, Hitchin, Chertsey, Norwich, and Wanstead. The National Rose Society's Metropolitan Show will be held at the Crystal Palace, Sydenham, on Saturday, July 6th, when a good display may be expected, though the season has been a trying one, and rosarians are complaining that they cannot count on a long continuance of bloom supplies. The Royal Horticultural Society's Fruit and Floral Committees will meet at Chiswick on Tuesday, July 9th, when the Chiswick Horticultural Society will also hold their annual show in the same gardens. There will be Rose Shows at Brockham, Diss, and Hereford on the same date. On Wednesday, July 10th, the Teddington Horticultural Society will hold their summer Show in the grounds attached to The Grove, and there will be Rose Shows at Brighton, Dursley, Ealing, Ipswich, and Tunbridge Wells.

THE WEATHER.—The weather in the south during the past few days has been cooler than it was towards the close of last week. Mr. Molyneux informs us that the shade thermometer registered 90° on Friday (June 28th) at Swanmore, Hants. Rain is much needed by growing or languishing crops.

TO CONTRIBUTORS.—In consequence of the space occupied by the index to the last half-year's volume and reports of Rose shows, the publication of several articles in hand are deferred to a future issue.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are requested to state that the amount collected by Mr. Crawford, Codrington Hall, Newark-on-Trent, in aid of the Jubilee Fund of this Institution, exceeded £40.

MESSRS. KELWAY & SON, Langport, who exhibited a bank of Herbaceous Pæonies, Delphiniums, Pyrethrums, and Gaillardias at the Paris Exhibition, from the 21st to the 27th of June, have been notified by Count Horace de Choiseul, President of the Jury, that a first prize has been awarded to them for their collection of cut flowers.

PEACHES BY POST.—"A Cornishman" will be obliged if those of our readers who are in the habit of sending Peaches by parcels post will inform him of their method of packing, and where he can obtain the most suitable boxes.

A FLORIFEROUS AZALEA.—This designation may be fairly applied to a fine specimen of the old *A. indica alba* which I recently observed in Mr. Prewitt's nursery at Hammersmith. The plant in question was in a 20-inch pot, and had borne 150 dozen blooms.—J. B.

ROSES AND CHRYSANTHEMUMS.—A Cheshire reader desires to know which of the above flowers are represented by the greater number of varieties and colours. We imagine Roses are the more numerous, but have not time to count, and as some of our readers may have the desired information at their fingers' ends, they will perhaps oblige our correspondent by imparting it.

IN our report of the York Show last week the awards in the class for ten varieties of fruits should have been—Mr. McIndoe, first; Mr. J. Edmonds, gardener to the Duke of St. Albans, and Mr. Dawes, gardener to The Hon. Mrs. Meynell Ingram, equal second; and Mr. Blair, Trentham, fourth. The Fête was a great pecuniary success, the receipts amounting to £1431 18s. 6d.

STRAWBERRIES.—At page 512 I observe "W. D. S." mentions Garibaldi. Are we to infer from what he says that the variety he mentions is distinct from Vicomtesse Hericart de Thury? I grow a few plants of both. I prefer Garibaldi. I observe it is ripening its fruit earlier than the Vicomtesse. The first ripe fruit from the former was gathered six days earlier than from latter.—W. T.

THE collection referred to in this Journal as that of ITALIAN

PLANTS AT OXFORD I have seen within the past month. It is the one containing the MS. notes formerly attributed to Dillenius, the contemporary of Linnaeus, and Sherard, from the latter of whom the professorship of botany at the Oxford University derives its title. The volume bears on its outside front cover some observations relating to its perfect condition when examined by a former famed curator of the garden, the author of "Baxter's British Flowering Plants," in whose handwriting they are made above his signature.—G.

LEEDS PAXTON SOCIETY.—At a largely attended meeting of the Society, held on the 22nd ult., Mr. Joseph Smith was presented with a portrait of himself, subscribed for by the members, as a token of respect and appreciation of valuable services, rendered by him as President during the past three years. The presentation was made by Mr. W. Grix, the Chairman, in appropriate terms, and was suitably acknowledged by the recipient. An illuminated tablet at the foot of the portrait bears the inscription, "Presented to Mr. Joseph Smith by members of the Leeds Paxton Society, in recognition of his services as President for the last three years, June 22nd, 1889."

MR. R. GILBERT sends us from Burghley a box of very fine STRAWBERRIES. The varieties are A. F. Barron, Burghley President, Sir Joseph Paxton, and Aberdeen Favourite. The last named is by far the richest in flavour, indeed of first class quality, though Burghley President is very good. A. F. Barron possesses much of the briskness of Sir Joseph Paxton. On page 520 last week we remarked, "It would be interesting to know if A. F. Barron grows freely at Burghley." As Mr. Gilbert is silent on the point, we add that it neither grows well in the somewhat heavy soil at Chiswick nor the light sandy soil at Girtford, and if it is not more satisfactory elsewhere we are bound to doubt if it is worthy of the name it bears.

FRUIT PROSPECTS.—The abundance of blossom on nearly every kind of fruit tree, which gave a hope of a good crop of fruit generally, is not now likely to be realised. The absence of frost in the month of May and the otherwise genial weather during that period helped to develop the blossom considerably, the result being a good set all round; but the dry weather setting in—for we have had but one shower for six weeks, accompanied with an unusually high temperature—caused most of the fruit to fall. Apples and Pears are about a third of a crop. Plums of the Victoria type are the only sorts generally well cropped. Green Gages on wall trees are also good, but out in the open very poor. Others have nearly all fallen. Cherries of the Bigarreau kind are thin, other sorts very fair. Apricots very poor. Peaches very fair at present, but as the stoning process is now going on many fruits may fail to swell. The only satisfactory crops are Strawberries, Gooseberries, Raspberries, White and Red Currants. Black Currants set well, but owing to the drought the fruit will be small and poor in quality. Figs show a good crop, especially upon those trees allowed freedom in growth, while trained trees the fruit is larger but very thin. Should the dry weather continue a much lower estimate will have to be taken at the end of the season, for with a little wind I see the fruit is still falling.—THOMAS RECORD, *Folkington Manor, Sussex.*

THE GARDENERS' ORPHAN FUND.—The usual monthly meeting of the Committee took place at the Caledonian Hotel, Adelphi, on the 25th inst., Mr. George Deal presiding. The minutes of the last meeting having been read, the Hon. Secretary reported that the last two investments of £500 each had been effected, the total sum in the funds being £2500. The report of the Sub-Committee, proposing an addition to Rule 12, bearing on the mode of election, was passed. The details of the coming election and annual dinner on July 19th were considered, and special Committees appointed to carry out the same. Mr. F. Q. Lane, Berkhamstead, and Mr. George Gordon, Gunnersbury, were elected upon the Committee in the place of Mr. C. Howe, late of Benham Park, deceased; and Mr. H. Williams of Holloway, who has resigned through press of business. The Hon. Secretary reported that the income of the Fund from all sources during the last financial year just closed amounted in round numbers to about £2000. Of this sum nearly £350 was in the form of annual subscriptions; £900 or so as donations; £260 from local secretaries; £45 as interest; and £400 from miscellaneous sources, including the Covent Garden Fête. A cheque was ordered to be drawn for the sum £35 15s., the quarter's allowances to the children who are upon the Fund. It may be again mentioned that the annual dinner and election of children on the Fund takes place at Cannon Street Hotel on Friday, July 19th. The election commences at 2 P.M., and the dinner will be held at 5 P.M. Sir Julian Goldsmid, Bart., M.P., the President, takes the chair at the dinner, and

the Committee are desirous he should be largely supported on this occasion.

— SEVERAL recent consular reports upon the agriculture of San Francisco and its neighbourhood give considerable prominence to the ravages of a NEW VINE DISEASE. First noticed in 1887, it has spread steadily, and last year several whole vineyards were destroyed. Experts have completely failed to identify it, so that there can be little doubt that it is really new. The course it runs is short. The young leaves of the affected Vines turn yellow and drop off when the young branches have acquired a growth of 1 to 3 feet. No cure or preventive has yet been found, and the epidemic bids fair to be as disastrous to American Vine growers as the phylloxera was to those of France. The Californian Orange orchards are not in a much better plight. The white cotton scale, as it is called, has killed grove after grove of vigorous trees. This pest is familiar enough. There have been outbreaks of it in Australia, but it is said to be all but extinct now, thanks to the action of a parasite. Consignments of this useful and somewhat peculiar medicine are arriving at San Francisco. Some planters have resorted to an extraordinary device for killing the grubs. It is to cover each tree with a tent, and then brew some prussic acid inside, which kills the grubs and eggs, but does not damage the tree. It is to be hoped the method may prove generally successful. The climate of California and the Pacific States generally is perhaps the best in the world for fruit-growing, but it is getting an unenviable notoriety for new diseases.—(*Daily News*.)

CANKER IN FRUIT TREES.

IN reply to "W.," page 434, whatever other readers of the Journal may say on the subject, I must confess that so far as I am concerned I have had "too much canker." I have wasted too much time writing on the subject, not that I regret my researches and experiments, and the treatment I have advocated. If I have any friends to the insect theory in the Journal they must be very quiet ones, for, so far as my memory carries me, the only friend to the same view was Mr. Harrison Weir some years ago, and we were working and writing pretty much the same, quite independent of each other's movements. So long as the controversy is carried on with the same good feeling I will endeavour to crack "W.'s" nuts, however hard the shells may appear. I know I am commencing a difficult task in attempting to adequately reply to the forcible and excellent article on page 434. If I could forget my experiments and experience I would not waste a moment in replying.

Mr. Tonks is quite able to take care of his theory without my interference. My experience on the point is that many trees can be restored to a fairly satisfactory condition by stimulating to new growth and vigour by the addition of fresh soil to the roots, or by top-dressing with manure, but that canker is not permanently cured, although a cankered place may grow up, as fig. 70 is represented to be approaching—and I have many specimens quite grown over—my contention is that unless certain insect life is destroyed canker will break out again at other points on the tree, whither they move and take up a fresh abode, and in time produce a canker.

It may be I shall be considered dogmatical to adhere to my conviction. When Jack Frost asserts his power, and "bites" here a branch and there a branch, as represented in the Impney specimens, and causes "chilblains" on the trees that I consider cured on the insect theory, then I will honestly acknowledge my mistake. Six or seven years of working and watching have altered my opinion on some points, and one of "W.'s" "nuts," I confess, I have had to give up—viz., that insects only attack certain sorts, or those they like best. I have had to give up that opinion on some of the worst known sorts for cankering, that of Dumelow's Seedling, Ribston Pippin, and Hawthornden. My present idea is derived from practical experiments since I held the opinion that insects preferred certain sorts, which I believe was written some years ago.

Here is a case in point. About six years ago I grafted a Dumelow's Seedling on a Hawthornden stock, which was cankered half way through, worse than is represented in fig. 70, the trunk being about 2 inches in diameter. This was cut back to within a foot of the ground, and I took particular care that every particle of the remaining stock below the grafts was enveloped in limewash and a strong insecticide, so that the infested part, if any insects still remained, were entombed. The scions were from a healthy tree, and were carefully examined, and no insects appeared to be on them. That tree is now the healthiest in my garden, and has never shown a symptom of canker since, and frost has been very merciful to it ever since, although the sappiest and worst ripened wood on the premises often retaining its growing leaves into November. I hope "W." will crack that nut on the "frost bite" theory. That tree is worth photographing as a comparison to the hundreds of acres of orcharding eaten up by "blight." Another case: I have a Ribston Pippin grafted on a stock raised from seed about seven years old. When I was about to graft it I had my doubts about taking scions from an old cankered orchard tree, but as I had no other I took the precaution to get my magnifying glass, and found a quantity of insects on it. These I carefully removed, and to make sure that none escaped, the scion was encased in limewash and an insecticide. The tree grew, and is as healthy as can be, and unless any communication

with other trees on which insects are established takes place, I have faith that it will remain healthy, while young wood on the old tree still cankers.

Now, another nut for "W." to crack. If the frost bit two of Dr. Hogg's Dumelow's Seedlings in a row of three trees, why did the other escape? Was it wrapped up? Will anyone find a cankered tree without the same species of insect appearing?—J. HAM.

TOMATOES AT FOXHOLES, HITCHIN.

IN looking through the gardens and glass houses belonging to Mr. Tindal Lucas my attention was called to a grand house of Tomatoes. Mr. Sheppard, the head gardener, informed me the variety was Sutton's First Crop. The seeds were sown in the first week of January, and when the plants were strong enough they were planted in shallow boxes and stood along the front of one of Newton's new patent houses, just over the pipes, and in the full light. They are trained up wires in the same way as Vines are usually trained, the one-stem system being practised. The plants are not more than 6 or 8 inches apart, and about the same distance from the glass. Ripe fruit was taken about the 1st of April, and a constant supply has been maintained till the present time. The fruit hangs like ropes of Onions, and fine fruit too. Mr. Lucas is justly proud of his success. Whether to give the credit to the variety, the house, or the gardener, I do not know, but from what can be seen of the gardens generally I think there is some praise due to Mr. Lucas for the confidence he places in his gardener, and also to the latter for the pains he takes to carry out his employer's wishes. There are other notable features of gardening at Foxholes, but I will not trespass on your space in describing them now.—G. MERRITT.

A GIGANTIC AROID.

ALTHOUGH numerous members of the great and peculiar family of Aroid plants are cultivated in British gardens there are others that are unknown to horticulturists, or not valued from a decorative point of view, yet possessing much interest for botanists and all who are concerned with the peculiarities of the vegetable world. As botanical studies the whole of the Aroids are interesting in somewhat more than an ordinary degree, and though the remarkable fœtid odours exhaled by the inflorescence of many species renders them the reverse of favourites for cultural purposes, still it must be admitted that a plant like the *Richardia æthiopica*, now so extensively grown, possesses a distinctness of habit, an elegance of foliage and boldness of floral characters, that amply entitle it to its present popularity. That, however, is almost the only member of the family generally grown, though a few others are represented in gardens and houses.

Visitors to the Royal Gardens, Kew, have for some time been familiar with two pictorial representations of giant Aroids, one of these being in the gallery of paintings contributed by Miss North, and the other in the museum near the main entrance at Kew Green. The first depicts *Amorphophallus campanulatus* as seen in its native home—Java—where it produces a single enormous leafstalk surmounted by a divided leaf, and rising from the root a huge somewhat bell-shaped spathe. It is said that previous to the bursting of the spathe, which takes place suddenly about sunset, there is an accumulation of heat therein. When it opens it exhales an offensive odour that is quite overpowering, and so much resembles that of carrion that flies cover the club of the spade with their eggs. In the rise of temperature noticed this *Amorphophallus* is not exceptional, as the same peculiar phenomenon has been observed in other members of the same family, while in attracting flies *Stapelia* (commonly known as Carrion Flowers) have a precisely similar influence.

The other representation is that of *Amorphophallus* or *Conophallus* *Titanum*, which placed on the ceiling of the Wood Museum has attracted much attention, and created no little astonishment for several years. This shares several characters of *A. campanulatus* just noted, but on a magnified scale. It has a single tall leafstalk with its strange snake-like markings, and a great divided leaf blade at the apex, and a huge spathe and spadix, but all of enormous proportions, truly gigantic in comparison with its relations generally, and meriting the title with which it has been distinguished. The plant was discovered by Signor Beccari in Sumatra, who furnished drawings, and the Marquis Corsi Salviati was the means of calling attention to them in this country. Tubers were sent to Kew in 1879, and the production of the immense leaf created some sensation in succeeding seasons, forming a prominent object in the Victoria Lily house. This year, however, the interest already created in the plant has been considerably increased by the production of its spathe, but though many watched its development few saw it when it was fully open, and its duration was short in that stage. The spathe and stem attained the height of 7 feet, having in the latter part of the time grown at the rate of 4 inches a day. The spathe commenced expanding on Friday morning, June 21st, and when at its largest

it was 4 feet in diameter, green externally at the base, and white at the upper part, the inner surface being a dark purple, the total length of the spadix 5 feet, diameter 10 inches, and the colour a

pollen was produced, and it is expected that seeds will be formed. At the meeting of the Royal Horticultural Society's Scientific Committee on June 25th Mr. D. Morris of Kew furnished some particulars respect-

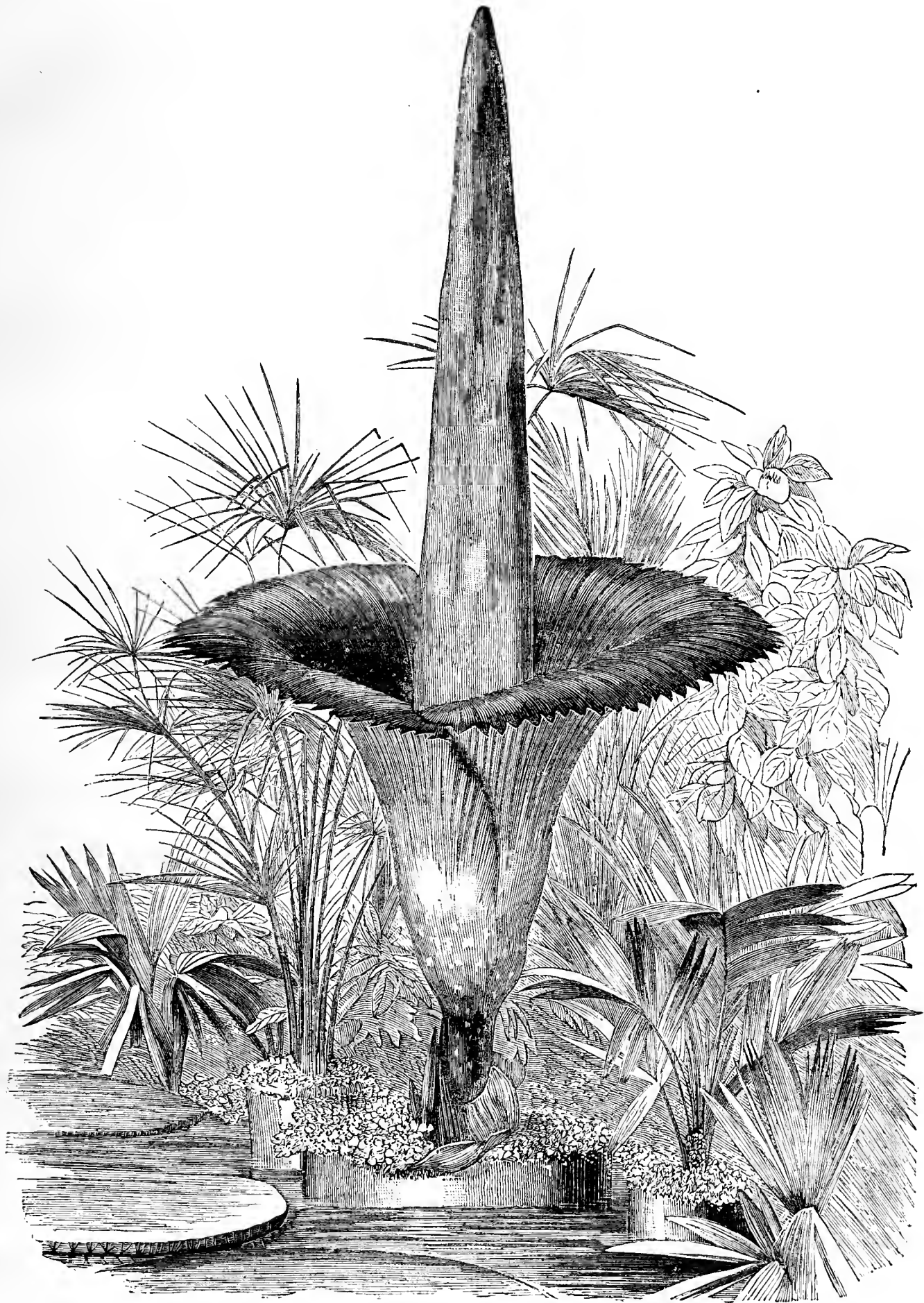


FIG. 2.—AMORPHOPHALLUS TITANUM.

deep yellow when mature. During Friday the odour emitted from the spathe was most offensive and powerful, and was compared to that of decaying fish, but it lasted a very short time, for when the spathe began closing on the following day it had greatly decreased. A quantity of

ing the plant, which will be found on page 3 of this issue, but the principal facts have been embodied in this notice.

The illustration (fig. 2) gives a representation of the plant as it was growing in the Victoria house at Kew.



A TERM of rainless days and almost dewless nights, with bright sun and a high temperature, induced Roses to expand rapidly, and it soon became apparent that the societies which had chosen the earliest dates for their shows were likely to have the best chance of good displays. Exhibitors must even during the past week have found it difficult to cut blooms that might be expected to be in their best condition by the time the Judges commenced their duties. Fresh young buds that had only commenced developing at 4 A.M. were fully expanded on the plant by 9 or 10 A.M., and scarcely much better when cut and placed in a cool room. Under these circumstances a short Rose exhibition season can only be counted upon, unless there is a speedy change in the weather.

OXFORD.—JUNE 25TH.

THE June Show of the Royal Oxfordshire Horticultural Society always falls upon one day of the commemoration at the University, and it is therefore a part of the week's festivities. The Exhibition took place in the charming grounds of Trinity College, where there is an avenue of Limes, said to be 200 years old. Cut Roses were a great feature, and some superb blooms were shown. Several classes were open to all comers, and in that for twenty-four triplets there was a good competition, Mr. George Prince, Oxford, being placed first with very fine blooms indeed, mainly composed of Teas and Noisettes, the leading varieties being Edith Gifford, Grace Darling, Viscountess Folkestone, Marie Van Houtte, Anna Ollivier, Alba Rosca, Jean Ducher, Innocente Pirola, Amazone, Princess of Wales, Souvenir d'Elise Vardon, Catherine Mermet, Madame Cusin, Niphotos, Lady Mary Fitzwilliam, Comtesse de Nadaillac, Jean Pernet, Madame Caroline Kuster, and a few Hybrid Perpetuals. Dr. S. P. Budd, of Bath, was second, showing some very fine blooms, including Marie Verdier, A. K. Williams (in superb form), Madame G. Luizet, Ulrich Brunner, François Michelin, Le Havre, Violette Brougere, Alfred Colomb, Madame Eugénie Verdier, Etienne Levet, Edith Gifford, Anna Ollivier, Dupuy Jamain, and Merveille de Lyon. Third Messrs. George Cooling & Son, Bath, who had some very good flowers. In the class for twenty-four blooms Mr. J. Matloek, Headington Hill, Oxford, was first with very good examples, his leading flowers being La France, Ulrich Brunner, Lady Mary Fitzwilliam, Marie Baumann, Marie Verdier, Innocente Pirola, Jean Ducher, François Kruger, Madame C. Kuster, Catherine Mermet, La Boule d'Or, Amazone, Baron de Bonstetten, &c. Second, Dr. Bywater Ward, Warneford Asylum, with La France, Louis Van Houtte, Marie Baumann, Victor Verdier, Duchesse de Vallambrosa, Madame Lacharme, Jean Ducher, Duchess of Bedford, Auguste Rigotard, Souvenir d'Elise, &c. Third, Messrs. G. Cooling & Son. In the class for twelve blooms Messrs. Geo. Cooling & Sons were first with Merveille de Lyon, A. K. Williams, Magna Charta, Jean Ducher, Marie Verdier, Star of Waltham, Countess of Oxford, and Mrs. John Laing. Second Mr. A. Evans, Marston, Oxford. In the members' classes for twenty-four and eighteen varieties Mr. S. P. Budd was first in both cases. Mr. J. Walker, nurseryman, Thame, was second with twenty-four; and Mr. John Saunders, Headington, second with eighteen. The varieties shown were in the main duplicates of those already named.

Plants, fruit, and vegetables were also exhibited, but we are compelled to omit the report of them this week.

RICHMOND.—JUNE 26TH.

THE Richmond Society was fortunate in their date as far as the Roses were concerned, for the classes were well filled, and though good exhibitions of these flowers have been held there before they were surpassed on the last occasion. Indeed, it was specially stated that the entries exceeded the total of the past four shows together. Over sixty stands were staged, as many as eight competitors with thirty-six trebles and nine with twenty-four trebles entered, and in the smaller classes there were ten to twelve competitors. In several of the classes the exhibits were of very even merit, and in the stands of thirty-six some grand blooms were shown, though all appeared to have found a difficulty in making up the full number. Yet taken altogether it was one of the best June Rose Shows we remember to have seen.

With thirty-six trebles Mr. B. R. Cant was placed first with a superbly fresh lot of flowers; A. K. Williams, Dr. André, Duke of Edinburgh, Marie Baumann, Madame Cusin, Marshal Wilder, Elise Vardon, Niphotos, and Merveille de Lyon were very beautiful. Messrs. Paul & Son, Cheshunt, came second with some grand flowers, Madame A. Lavallé, Etoile de Lyon, Mrs. John Laing, Perle des Jardins, Marie Baumann, Marie Rady, and Her Majesty were exceptionally good. Mr. F. Cant of Colchester was third. In the class for twenty-four trebles, however, the latter exhibitor was placed first with handsome blooms, including The Bride, Madame Gabriel Luizet, La France, Madame de Watteville, &c. Mr. B. R. Cant was second, and Messrs. Paul & Son third. In the amateurs' classes the Rev. J. H. Pemberton, Havering, Essex, was first with twenty-four singles, Mr. R. E. West of Reigate coming second; whilst in the class for twelve blooms the same order was observed. All those flowers were very fresh and pleasing. Messrs. Jas. Veitch & Sons

showed a fine collection of cut Roses, not for competition, having specially fine blooms of Bennett's Her Majesty, which is now fast developing into an admirable exhibition Rose.

WINCHESTER.—JUNE 27TH.

THE Winchester Horticultural Society held their sixth annual Rose Show in the Guildhall on the date named, and was a decided success, exhibitors coming from ten counties. The blooms, though not large, were fresh and of good quality. The above remarks apply mainly to the Hybrid Perpetuals. Tea Roses were excellent, the blooms being large, of good form, and very fresh. It would be difficult to conceive a finer stand than that which gained for the Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, the first prize for twelve Teas or Noisettes. Souvenir d'Elise in this stand was awarded the National Rose Society's silver medal for the premier Tea or Noisette in the amateurs' classes. It was a bloom to be remembered by its freshness and form.

The principal class was for forty-eight, distinct, single trusses, for which three lots were staged. Messrs. Harkness, nurserymen, Bedale, Yorkshire, were distinctly first, the blooms being generally of good size, finely coloured, and very fresh. The varieties consisted of Ulrich Brunner, large and rich; La France, Alphonse Souper, Eugénie Verdier, Madame J. Debois, a very pale blush lilac, large and fine; Marie Verdier, Capitaine Christy, Madame Mussett, Alfred Dumesnil, very fine; Mons. Noman, full; A. K. Williams, perfect in form; Lady Mary Fitzwilliam, Général Jacqueminot, rich; M. L. Dickson, Charles Lefebvre, Pride of Waltham, Duchess of Edinburgh, Prince Camille de Rohan, Jean Ducher, Constantine Tretiakoff, fine; Madame de Watteville, Horace Vernet, Souvenir d'Elise Vardon, Marquise de Castellane, Merveille de Lyon, Harrison Weir, Mrs. J. Laing, fresh and good; Queen of Queens, Marie Baumann, fine in form; Souvenir d'un Ami, Antoine Ducher, Marie Rady, Maréchal Niel, Duchess of Bedford, Silver Queen, Madame Cusin, Boieldieu, very full; Dr. Andry, Innocente Pirola, Heinrich Schultheis, Catherine Mermet, Crown Prince, good; Marie Van Houtte, Le Havre, Gloire de Bourg la Reine, Madame Gabriel Luizet, and two unnamed varieties. Mr. F. Cant, Colchester was second, the blooms smaller yet fresh. Her Majesty, Horace Vernet, Star of Waltham, Dupuy Jamain, and Charles Lefebvre were among the best blooms. Mr. B. R. Cant, Colchester, was third with fresh small blooms.

For twenty-four distinct varieties, triplets, four competed, producing a good display. Mr. F. Cant was placed first with good and fresh blooms, especially of Her Majesty, François Michelin, Madame de Watteville, Innocente Pirola, Marie Baumann, Marie Cointet, and Mons. Noman. Messrs. Cooling, Bath, were second, and Messrs. Keynes, Williams & Co., Salisbury, third.

For eighteen Teas or Noisettes, distinct, four competed, making a fine display. Mr. Frank Cant was a good first with a fine stand of fresh, well-formed blooms of Madame de Watteville, Niphotos, fine; Madame Cusin, richly coloured; Souvenir d'Elise, full; The Bride, Innocente Pirola, extra; Ye Primrose Dame, a lovely lemon shade in the centre of the bloom; Madame H. Jamain, Souvenir de Paul Neyron, Comtesse de Nadaillac, good; Catherine Mermet, deep; Marie Van Houtte, Miss Ethel Brownlow, a finely formed deep pink variety; Madame Margottin, Jean Ducher, Madame Scipion Cochet, Francisca Kruger, centre golden orange, with pale outer petals, very fine; and Madame C. Kuster. Second, Mr. B. R. Cant, with smaller and thinner blooms, the best being Souvenir d'un Ami, Comtesse de Nadaillac, and Miss Ethel Brownlow. Messrs. Keynes & Co., third.

Four staged in the class for twelve trebles, Teas or Noisettes, the best coming from Mr. F. Cant, which were fresh and of good form; Madame Cusin, extra; Madame Watteville, Jean Ducher, Francisca Kruger, and Comtesse de Nadaillac were the best blooms. Second, Mr. B. R. Cant; third, Messrs. Keynes.

For twelve blooms of any one dark variety of Hybrid Perpetual five competitors staged. Mr. B. R. Cant led the way with Ulrich Brunner, of good colour, and fresh, though small. Messrs. Keynes & Co. were second with Alfred Colomb, uneven both in size and colour. The third prize card was missing. Not a good class. For the same number of any one light variety of H.P., six staged, making a good show; Lady Mary Fitzwilliam in good condition won for Messrs. Keynes first honours, Messrs. Cooling & Son being second with Mrs. J. Laing. Madame Gabriel Luizet was third, the name of the exhibitor being omitted. Two splendid boxes of Madame Watteville were staged by Messrs. F. and B. R. Cant for twelve of any variety of Tea or Noisette, the prizes going in the order named.

In the class for twenty-four distinct Roses there were five competitors, Messrs. Keynes leading the way with a good stand, the best being François Michelin, Lady Mary Fitzwilliam, Mons. E. Y. Teas and Victor Hugo. Messrs. Cooling were second with blooms a trifle smaller; Alfred Slaughter, Esq., Jarvis Villa, Steyning, being third with larger blooms, but many of them at least a day too old.

The following classes were not open to nurserymen:—For twenty-four distinct, single trusses, there were six competitors. Here Mr. Slaughter led the way with large, full and fresh specimens, very rich in colour, the best being Ulrich Brunner, Marie Rady, Etienne Levet, Dr. Andry, Alfred Colomb, Mrs. Jowett, and Innocente Pirola. Mr. G. Campbell, gardener to S. P. Budd, Esq., 8, Gay Street, Bath, was second with smaller blooms although good in quality, the Rev. A. Foster Melliar third, also staging well.

Twelve distinct trebles were staged by four competitors, the best, fresh well formed blooms, by Mr. Campbell. Ulrich Brunner here again

showed conspicuously. Second, the Rev. A. Foster Melliar, equal third prizes going to Mr. Slaughter and M. F. Flight, Cornstiles, Twyford, Winchester.

In the class for twelve distinct trusses, Teas or Noisettes, seven competed. Decidedly the best were staged by the Rev. A. Foster Melliar. Souvenir d'Elise, previously noted, Princess of Wales, Comtesse de Nadaillac, La Boule d'Or, and The Bride were especially noticeable on account of their great excellence. The Rev. F. R. Burnside, Much Birch Vicarage, Herts, and Mr. Campbell were second and third respectively with excellent stands. The Rev. A. Foster Melliar took leading honours in the class for twelve blooms, half to be Tea or Noisettes and the remainder Hybrid Perpetual amongst eight others, second and third prizes being awarded to Captain John Ramsey, Fareham, and Mr. Slaughter in the order named. For six trebles, distinct, Teas or Noisettes, five entered the lists, the best coming from the Rev. F. R. Burnside, medium in size, full and fresh, Innocente Pirola was especially fine. Mr. Slaughter second and the Rev. A. Foster Melliar third. The class for twelve distinct single trusses brought out some new exhibitors. The first prize stand from J. T. Strange, Esq., Aldermaston, Berks, contained the best bloom in the Show of *Maréchal Niel*, which was rich in colour. Ulrich Brunner was here again conspicuous. P. P. C. Burnand, Esq., May Park, Reigate, was second, and D. Seaton, Esq., Rutland Lodge, Bitterne, third. Mr. J. Kaines, The Cedars, Park Road, and Mr. H. Owen, Church Lane, Basingstoke, showed well in the amateur class.

The silver medal of the National Rose Society for the best Hybrid Perpetual in the classes confined to other than nurserymen was awarded to Marie Rady, a well-formed bloom in Mr. Slaughter's stand. Mr. G. Hillier, nurseryman, staged three boxes of blooms not for competition of leading varieties.

To add variety to the Show prizes were offered for miscellaneous exhibits, the leading features being twelve bunches of stove and greenhouse cut blooms staged by Mr. Budd, gardener to F. Dalgety, Esq., Lockerby Hall, Romsey. Mr. Flight and Mr. C. Shenton, The Glen, Golden Common, Winchester, staged good exhibits of hardy cut flowers, the prizes going in the order named. Mr. Budd had the best table plants—a clean lot. Mr. Hillier staged a good group of plants not for competition. From Mr. B. Ladhams, florist, Shirley, Southampton, came an interesting collection of cut blooms of hardy herbaceous plants. Mr. E. King, florist, Pennington, Lymington, Hants, showed some excellent double Begonias in pots; Mrs. King (orange scarlet, very double, and large) was the best amongst many others; it is a new variety, deep pink in colour, very large, the petals being heavily fringed, which gives to the flower a novel yet striking appearance.

FARNINGHAM.—JUNE 27TH.

It was perhaps in one sense unfortunate that the Farningham Show had been fixed for the same date as Winchester, for the latter being the more important of the two it was natural that many growers would send their best flowers there rather than to Farningham, and this was in effect the case. We missed some professional exhibitors whom we have been in the habit of seeing at this charming little Show, while some of those who were there had confessedly sent their best flowers elsewhere. On the other hand, it was fortunate for them that they had fixed so early a date, for as the neighbourhood is an early one those in the district would have been quite excluded had the Show been held at the usual time, for as the unexpected always happens, so it has been this year in Roses. Who would ever have expected in March that we should have reverted back to the days before 1879, from which time I have always maintained we have been in a cycle of late seasons, and perhaps we shall now have to encounter a series of early ones.

We missed, too, some of those exhibitors who used to make the Farningham remarkable for its finished blooms. Especially did we regret the absence of Mr. W. H. Wakley, whose Roses one always liked to linger over, and Mrs. Fuller, whose neatly arranged boxes of excellent blooms were always a joy to visitors, but a terror to her competitors; and others, too, were absent from one cause or another. Doubtless the intense heat of the season had something to do with it, for I heard of a small exhibition where there was only one class for twelve there were fifteen entries and only two came to the front. And now for the brighter side. There were some excellent stands exhibited, more especially in Teas, the boxes of Mr. Geo. Prince of Oxford and the Rev. F. A. Burnside being particularly good, while the decorations were both numerous and attractive. The day was magnificent, and the pretty village with its famous trout stream looked its very best.

The class for nurserymen was done away with, and the premier class was for thirty-six blooms, was open to amateur and professional growers, the first prize being awarded to Mr. R. E. West for an excellent stand of the following flowers—*La France*, *François Michelin*, *Madame Gabriel Luizet*, *Marie Baumann*, *Marie Finger*, *Pierre Notting*, *Abel Carrière*, *Beauty of Waltham*, *Comtesse d'Oxford*, *Mrs. George Dickson*, shown as no one else seems to be able to show it; *Prince Arthur*, *Baronne de Rothschild*, *Madame Victor Verdier*, *Général Jacqueminot*, *Merveille de Lyon*, *A. K. Williams*, *Mrs. John Laing*, *Madame Lacharme*, *Ulrich Brunner*, *Comtesse de Nadaillac*, *Comtesse de Serenye*, *Hon. Edith Gifford*, *Mons. Noman*, *Heinrich Schultheis*, *Victor Verdier*, clear, very bright; *Eugène Fürst*, *Marquise de Castellane*, *Le Havre*, *Marie Rady*, *Captain Christy*, *E. Y. Teas*, *Duchesse de Vallambrosa*. Mr. Geo. Prince was second, Messrs. Geo. Bunyard & Co. third, and Colonel Pitt fourth. In Class 2, for twelve Teas or Noisettes, Mr. Geo. Prince of Oxford was first with beautiful blooms of *Comtesse de*

Nadaillac, *Niphetos*, *Souvenir d'un Ami*, *Souvenir d'Elise Vardon*, *Madame Caroline Kuster*, *Prince of Wales*, *Innocente Pirola*, *Madame Cusin*, *Hon. Edith Gifford*, *Etoile de Lyon*, *Jean Ducher*, and *Amazone*. The Rev. F. R. Burnside was second. In Class 3, for twelve varieties, *Captain Knight of Bobbing* was first with *Ulrich Brunner*, *Gabriel Luizet*, *A. K. Williams*, *Madame Cusin*, *Duchess of Bedford*, *La France*, *Jules Finger*, *Etienne Levet*, *Charles Lefebvre*, *Madame Bravy*, and *Mdlle. Annie Wood*. In Class 4, for nine Teas, some beautiful flowers were shown, the Rev. F. R. Burnside being placed first with *Madame de Watteville*, *Madame Cusin*, *Innocente Pirola*, *Souvenir d'Elise Vardon*, *Hon. Edith Gifford*, *Miss Ethel Brownlow*, *Catherine Mermet*, and *Princess Beatrice*. For six blooms of any dark Rose, Dr. Tucker was plainly first with *Ulrich Brunner*. Colonel Pitt second with *Madame Isaac Pereire*. For six of any light *Captain Knight* was first with *La France*, and *Charles O'Shea, Esq.*, second with *Captain Christy*. In Class 7, for twelve Roses grown within three miles of the village of Farnham, Dr. Tucker was first with a good stand, comprising *Beauty of Waltham*, *Abel Carrière*, *Captain Christy*, *Marie Baumann*, *Comtesse d'Oxford*, *Heinrich Schultheis*, *Ulrich Brunner*, *Madame Gabriel Luizet*, *Duke of Edinburgh*, *Madame Hippolyte Jamain*, and *Senateur Vaisse*. In the class for nine varieties Mr. H. Wallis was first with *Charles Lefebvre*, *Madame de Castellane*, *Duke of Connaught*, *Captain Christy*, *Louis Van Houtte*, *La France*, *Alfred Colomb*, *Princess Beatrice*, *Emilie Hausburg*, and *Edouard Morren*. Mrs. Dalton was second. For six Roses the first prize was awarded to A. Hugh Smith, Esq., for *Louis Van Houtte*, *Gloire de Dijon*, *Prince Camille de Rohan*, *La France*, *Marie Finger*, and *Etienne Levet*. For six Teas the first prize was awarded to Mr. H. Wallis for *Anna Olivier*, *Madame de Watteville*, *Innocente Pirola*, *Souvenir d'Elise*, *Souvenir de Therese Levet*, and *Madame Caroline Kuster*. Dr. Tucker was second. The silver-gilt medal in the distinct classes was awarded to Dr. Tucker for a finely coloured bloom of *Duke of Edinburgh*. The silver medal for the best Rose in the amateurs' classes was awarded to C. O'Shea, Esq., for a good bloom of *Her Majesty*, and the bronze medal to H. Waller, Esq. for *La France*.

The various prizes offered for decorative arrangement of flowers were well contested, the first for three centrepieces going to Miss Solomon for three vases of Iceland Poppies; these were very pretty, but it is questionable if it can be called arrangement of flowers, for they are simply put on without any arrangement; however, they were attractive. The first prize for one centrepiece was awarded to Miss Maddocks for a pretty bronzy arrangement with bronze-coloured Iris, &c. The other prizes were shared by Mrs. Hugh Smith, Miss Allenson, Miss Ashurst, Miss Maddocks, The Misses Rasleigh, &c. There were several arrangements of tables with flowers, where the first prize was awarded to Mrs. Seale. There were some fine dishes of Strawberries, as there ought to be from this Strawberry growing district, and it was worthy of notice that the only kind shown was Sir Joseph Paxton.—D., Deal.

REIGATE.—JUNE 30TH.

THE Reigate Rose Society, holding on to their favourite date, the last Saturday in June, have this year obtained one of the best show days in the south of England. Yet even this, June 29th, was thought too late, and June 23rd was said on all sides to have been the climax of Rose blooming, an almost unprecedented earliness of date with show Roses. The entries were seventy-five as against fifty last year, and the quality of the exhibits pronounced high by the Judges, especially amongst the Teas, which were of peculiar brightness and substance. The Judges, Committee, and other friends were, as usual, entertained at luncheon, at his residence, by Mr. Hayward, the President. A military band was in attendance, and the grounds of Mrs. Waterlow, kindly lent again for the occasion, presented a gay spectacle throughout the afternoon. The awards were as follows:—Class 1, open to all England, nurserymen and amateurs, twenty-four varieties.—First, Mr. F. Cant. Second, Mrs. Waterlow. Third, Rev. J. H. Pemberton. Fourth, Messrs. Paul & Son. Twelve Teas.—First, Mr. F. Cant. Second, equal, Mrs. Waterlow and Mr. B. R. Cant. Members only.—Twenty-four varieties.—First, Mr. E. B. Lindsell. Second, Mr. E. M. Bethune. Third, Mr. R. E. West, who also occupied the same relative positions for six triplets. Twelve varieties.—First, Mr. E. Mawley. Second, Rev. A. Cheales. Third, Miss Baker (nine entries). Four triplets.—First, Mr. Burnand. Second, Mr. Mawley. Third, Mr. Cheales. Nine Teas.—First, Mr. Mawley. Second, Miss Baker. Third, Mr. E. Horne. Six varieties.—First, Mr. Orpen. Second, Mrs. Ponsford. Third, Messrs. Hatch and Freshfield, equal; five entries. Six Teas.—First, Mr. Orpen. Second, Mr. Freshfield. The silver floral medal of the Royal Horticultural Society for the best box of Roses was awarded to Mrs. Waterlow. The bronze medal given by Mr. West to the best H.P. was won by the same exhibitor with Lord F. Cavendish. A similar award given by Mr. J. D. Pawle for the best Tea being won by Mr. Bethune with *Comtesse de Nadaillac*. Table decoration for six persons.—First, Mr. Fearon. Second, equal, Miss K. Baker and Mrs. Burnand. Third, Miss Baker. New Roses were shown by Messrs. W. Paul & Son, Waltham Cross, and Paul & Sons, Cheshunt, also Prince's new white sport from *Souvenir d'Ami*.

In Mrs. Waterlow's boxes (Mr. Brown, gardener) there were noticeable *Innocente Pirola*, *Francisca Kruger*, and *Star of Waltham*, of great size and perfection. In Mr. F. Cant's, *Horace Vernet*, *Boule d'Or*, as this most difficult Rose is rarely seen. In Mr. Prince's stand *The Bride* was very large and fine; *Madame Cusin* was of great size and excellence, also *Boule d'Or* was very fine.

ROYAL HORTICULTURAL SOCIETY.

NATIONAL ROSE CONFERENCE AND SHOW.—JULY 2ND AND 3RD.

WHEN the Royal Horticultural Society announced as a part of their programme for the present year that it was intended to hold a representative show of Roses and a conference of Rose growers in the gardens at Chiswick the idea was received with general approval, and a scheme was soon developed that promised excellent results. The full assistance of the National Rose Society was at once accorded, and a large influential Committee was formed, comprising principally the members of the Rose Society's own Committees, with the addition of others from the ranks of the Royal Horticultural Society, and a large number of foreign members interested in the matter.

It was stated in the preliminary announcement that "the object of the Conference is to get together as large and as representative a collection of Roses of all descriptions as possible; to form an exhibition of all subjects pertaining to the Rose, whether in its botanical, its horticultural, its literary, or its artistic aspects; and to bring together for the purposes of reciprocal information and fellowship all those interested in the Rose and its culture." A schedule was accordingly prepared, in which eighteen classes were enumerated, one for a large general collection of Roses, number not limited, to be arranged in their several families. Then six classes were grouped under the title Summer Roses, in which provision was made for the Moss and Provence Roses, the various hybrids of the China and Bourbon types, single Roses, and others. The next group comprised eleven classes for autumn-flowering Roses, in which Hybrid Perpetuals, Teas, and Noisettes were the chief features, two classes being devoted to "species of Roses" and "Rose literature," specimens of peculiarities of structure and disease being also invited. This was to form the Exhibition portion of the programme.

To render the work of the Conference as useful and convenient as possible it was decided to devote the first day, July 2nd, to matters of horticultural importance, papers dealing with the culture of Roses in its various aspects; the second day, July 3rd, being appropriated to botanical papers and discussion, under the presidency of Mr. J. G. Baker. A number of printed forms were also sent out to the members of the Committee and others inviting statistical returns concerning a variety of matters that could not fail to be both interesting and useful to Rose growers. These included selections of the best Hybrid Perpetuals and Teas for gardens and exhibition, either as plants or cut blooms; Roses for various kinds of soil, with questions relative to the best stocks, &c. When the information thus obtained is tabulated it may be expected to form a compendium of Rose know'edge of considerable value.

Although the exhibits were not quite so numerous as might have been expected, yet they answered their purpose, and the large marquee, 200 feet long, contained some handsome and interesting collections of new and old Roses.

"Class 1.—Great collection of all kinds of Roses, number not limited, one truss of each variety, to be grouped in their several families or classes." So said the schedule, and the exhibits in this class formed perhaps the most important feature of the display. Several Rose nurserymen of repute in the south of England staged collections, their names guaranteeing excellence. Messrs. W. Paul & Son, Waltham Cross, exhibited eighteen boxes, nine being Hybrid Perpetuals. They formed an effective display. The following were, perhaps, the most noteworthy: Madame Charles Wood, fresh and bright; Her Majesty, large but coarse; Violette Bouyer, small, but neat and well finished; Alfred Dumesnil, clear and fresh; Inigo Jones, large and well coloured. Pride of Waltham, Queen of Queens, Lord Bacon, Edouard Morren, Countess of Oxford, Pride of Reigate, and other back row flowers were large and, considering the season, good.

To Bourbons, Hybrid Bourbons, and Noisettes one box was devoted. Of the former Cannes la Coquette, Souvenir de Malmaison, Robusta, and Jules Jergensen were noteworthy; and of the Noisettes, W. A. Richardson, Rêve d'Or, and Fellenberg were best. Another box contained climbing Teas, such as Cheshunt Hybrid, Reine Marie Henriette, Belle Lyonnaise, Pink Rover (very attractive), Climbing Devonensis, and Madame Berard.

Teas and Hybrid Teas (two boxes) were best represented by Madame de Watteville, Perle des Jardins, Rubens, Madame Hoste (very beautiful), Grace Darling, Comtesse de Nadaillac, W. F. Bennett, Marie Van Houtte, and Madame Hippolyte Jamain. Amongst Austrians was the richly coloured Persian Yellow. Harrisoni, single yellow, was also good.

Amongst the most attractive Polyanthas were Little Dot, Anne Marie de Montravail, and Princesse des Pays-bas. The brilliant Fabvier was conspicuous among the Chinas, and so was Belle de Florence. In the same box were Rugosa and Rugosa alba (both very beautiful), Glorie des Rosamanes, and Madame Georges Bruant. The most attractive Moss variety was the Crested. Of other Roses, Blairii No. 2, Félicité (Parmentier), the Virginian Rambler, the Garland, Laure Davoust, and the Crimson Boursault were the most conspicuous.

Messrs. G. Paul & Son, the Old Nurseries, Cheshunt, also had a very extensive display, comprising fourteen boxes. The H.P.'s were a very bright even lot, and included some good blooms, notably Beauty of Waltham, Lady Mary Fitzwilliam, Prince Arthur, Victor Verdier, Catherine Soupert, Marie Raly, Her Majesty, Star of Waltham, Abel Carrière, Mrs. Charles Wood, Pride of Waltham, and Lady Helen Stewart. The Teas were fairly good. Amongst the best shown were The Bride, Marie Van Houtte, Belle Lyonnaise, Innocente Pirola, Souvenir d'Elise Vardon, Anna Ollivier, Mme. Bravy, and Francisca Kruger. Vivid, Juno, Paul Verdier, and Mrs. Bosanquet were amongst

the best of the Chinas, and there were some attractive singles, including Paul's White and Paul's Red, both bright and beautiful, Macrantha and Lucida. Hybrid Climbers comprised Evergreen Flora, Bennett's Seedling, Mme. Plantier, and Laure Davoust. Mignonette and Gloire des Polyanthes amongst the Polyanthas; L'Idéal, W. A. Richardson, Aimée Vibert, Reine Olga de Wurtemberg (very rich), Cheshunt Hybrid, Marie Lavallée, and Vicomtesse Folkestone. Amongst the Hybrid Teas were other pretty Roses in this large and handsome collection.

Mr. Rumsey, Joyning's Nurseries, Waltham Cross, had seven stands, chiefly H.P.'s and Teas, amongst which many of the varieties already named were well exhibited. The Teas collectively were very bright and fresh. Mr. C. Turner, Royal Nurseries, also had a fine lot, comprising eight boxes. The H.P.'s were of average excellence, and the Teas an admirable collection. Polyantha, Moss, and other Roses completed this fine display.

SUMMER FLOWERING ROSES.

Many of the old summer flowering Roses which—beautiful though they were, only had one period of beauty in the season, and that often of short duration—have been superseded by the Hybrid Perpetuals of more modern times, giving a succession of blooms into late autumn. Still much can be said in favour of some of these old and now neglected varieties, and lovers of Roses can always appreciate a bed or border of these free flowering and frequently charmingly fragrant past favourites when they chance to meet with them in some old country garden where those and similar plants are treasured. It was, therefore, a good idea on the part of the Committee to devote a section of the schedule to such Roses, for they add much to the beauty of any garden, and all establishments cannot be devoted exclusively to the production of exhibition blooms. For example, how much pleasure is derived from the inspection of an old-fashioned Rose garden, where trellises, pillars, and bowers are covered with climbing and cluster Roses, masses of soft tinted flowers, not much use for cutting except in a very young state, but exquisitely beautiful in their untrained freedom and extreme floriferousness. Even the old Rosa alba and its varieties, so familiar in some country districts, are not to be despised, for its flowers are charming in all stages from an artistic point of view, more so than the substantial H.P.'s and Teas, which we are now more accustomed to see.

Class 2.—Collection of Moss and Provence Roses, number not limited, not more than six trusses of each variety. Three exhibitors entered in this class, each of whom had some pretty varieties. Messrs. W. Paul and Son, Waltham Cross, had a box containing several pretty Moss Roses, the Pink Crested, White Bath, Common Pink Moss, and Little Gem being the most notable, the latter in particular having very neat crimson blooms, fragrant and free. Milton was shown as a new variety of Provence Rose, rich crimson and extremely fragrant.

Messrs. G. Bunyard & Co., Old Nurseries, Maidstone, also had a varied collection, including of Moss Roses Little Gem, already noted; White Bath Moss, in capital condition; Blanche Moreau, white, compact blooms, very neat in the bud; Crested, large, full, and sweet. Reine Blanche was also a good white Moss variety, and Céline a neat dark crimson purple, excellent in the bud. Of the Provence Roses there was the old common Provence, semi-double, pink, free, with clusters of buds; also Spong's, one of the Provence type, and Tuscany, small but deep velvety crimson, especially beautiful when half opened.

Messrs. J. Cranston & Co., Hereford, showed a stand in the same class, Moss Roses representing Baron de Wassenaer, Crested Moss, Perpetual White, Comtesse de Murinais, blush, and several others of attractive character, but not showing the Moss development very strongly.

Class 3, collection of Hybrid Chinas, Bourbons, Gallicas and Albas, number not limited, not more than six trusses of each variety. Messrs. W. Paul & Son contributed two stands of about two dozen varieties, the best of which were Madame Legras, white, sweet, and excellent; Madame Plantier, somewhat similar, and quite as free, but not so fragrant; Paul Perras, crimson, very free and good; Chas. Lawson, bright rose, large, and attractive; Blairii No. 2, delicate rose, with shell-like petals; Juno, soft blush, very handsome in the bud; and Ohl, rich crimson, sweet, and free.

Messrs. G. Bunyard & Co.'s collection in the same class also comprised some charming Roses, the Bourbon Madame Isaac Pereire being as fine in substance as a Hybrid Perpetual. The Hybrid Noisette Madame François Pittet, white, most floriferous and attractive, was noteworthy. The Bourbon Cannes la Coquette, something like a miniature La France Rose, is a charming variety, and was well represented by fresh buds and half opened flowers, and the Hybrid China Paul Ricaut, bright crimson and sweet, was one of the best varieties.

Messrs. Cranston & Co. had a stand of Hybrids, including Breunus, Madame Plantier, Juno, Madame Alfred Carrière, Blairii No. 2, and Fulgens amongst the best.

Class 4, collection of single Roses of decorative value, not more than six trusses of each variety.—Only one collection of these was shown, namely that from the Rev. J. H. Pemberton, which included several semi-double varieties as well. Of the singles were shown R. rubiginosa (Sweet Briar), R. cinnamomea plena, small, pale pink; R. rugosa alba, the white Japanese Rose, and R. lucida, soft crimson with a cluster of golden stamens; but one of the most beautiful of all was the striped Damask, crimson, blush and white in small streaks. Amongst the semi-double varieties were a pretty China Rose, several Damask Roses, the fine white Félicité Perpetué, a deep velvety crimson Tuscany, and the delicately beautiful Maiden's Blush.

Class 5, collection of Climbing Roses, not more than six trusses of

each variety.—Messrs. W. Paul & Son and Messrs. G. Bunyard & Co., and Messrs. Paul & Son were the exhibitors in this class, and each had a charming collection. The Waltham Cross stands contained capital examples of the following:—*Virginian Rambler* (Ayrshire), bluish white, delicate and graceful, semi-double; *Myrianthes Rénoucle* (sempervirens), white tinted crimson, deeper in the bud, clustered and free; *The Garland*, somewhat like a *Polyantha*, small, white or tinted pink, most floriferous; *Vivid* (Hybrid China), rich crimson, small but attractive; *Laure Davoust*, a small compact flower, varying from white to mauve, an extremely pretty variety; *Ruga* (Ayrshire), white, and free; and *Coupe d'Hébé* (Hybrid China), pink, full, and most delicately fragrant.

The Maidstone Climbing Roses were mostly white, yellow, or golden. *Maréchal Niel*, *Gloire de Dijon*, Climbing *Devoniensis*, *Beauté de l'Europe*, excellent; *Aimée Vibert*, *Bouquet d'Or*, *Madame Berard*, *Céline Forestier*, and *W. A. Richardson* being the best, together with *Cheshunt Hybrid* and *Reine Marie Henriette* amongst the coloured varieties.

Messrs. Paul & Son had eleven baskets of Climbing Roses, displaying their characters to much better advantage than in the ordinary boxes. Amongst them were *Flora*, bluish tinted; *Alice Gray*, white and bluish, delicate and pretty; *The Garland*, a small white, most floriferous variety; *Bennett's Seedling*, white, free; *Madame Plantier*, *Félicité Perpetué*, *Coupe d'Hébé*, and *Russelliana*, small, rich crimson.

Class 6, collection of *Polyanthas*, not more than six trusses of each variety.—Messrs. Bunyard & Co. showed the only representatives of these graceful Roses, and the most noteworthy varieties were *Perle d'Or*, deep golden orange; *Fairy Pet*, white; *Anne Marie de Montravel*, white, excellent; *Mignonette*, pale pink, free; *Gloire des Polyanthes*, pale rose, free.

Class 7, any other summer flowering Rose or Roses, not more than six trusses of each variety.—Messrs. Bunyard & Co. had a stand of summer flowering Roses, comprising *Persian Yellow*, *Rosa Mundi*, the single *R. indica*, the *Yellow Austrian Briar* in excellent condition, *Paul's Single White*, very fine; *Rose Button*, a neat pink bud; and *Baron Gonella*, bright rosy crimson, lighter on the inner surface, fragrant.

AUTUMN-FLOWERING ROSES.

The classes devoted to these included representatives of the principal exhibition Roses, good examples of *Teas* and *Hybrid Perpetuals* being staged by the chief trade growers. *Teas* from Mr. Prince were wonderfully fresh and good, and the brightly coloured varieties of H.P. were noteworthy for their rich clear tints.

Class 8, collection of *Hybrid Perpetuals*, not exceeding forty-eight varieties, one truss of each.—Three collections were here staged. In that from Messrs. Burrell & Co., *The Nurseries*, Cambridge, the finest blooms were *Mdme. Montet*, *Marquise de Castellane*, *Her Majesty* (very fine), *Horace Vernet*, and *Comtesse d'Oxford*. Messrs. Cranston & Co., *Hereford*, were admirably represented by *Mdme. Charles Wood* (a beautiful bloom), *John Stuart Mill*, *Mdme. Marie Rady*, *M. Etienne Levé*, *Mons. E. Y. Teas*, *Star of Waltham*, and *Merveille de Lyon*. These were amongst the finest blooms in the Show. *Alfred Colomb*, *Mrs. John Laing*, *Marie Verdier*, and *Mdme. Eugène Verdier* were the best blooms in Messrs. Keynes, Williams & Co.'s stand. There were four stands of twenty-four H.P.'s. Mr. Frank Cant of Colchester had *Alfred Colomb*, *Her Majesty*, *Ulrich Brunner*, and *Charles Lefebvre* very fine and richly coloured. *Ulrich Brunner*, *A. K. Williams*, *Countess of Oxford*, and *Star of Waltham* were Messrs. G. Bunyard & Co.'s best flowers, and Messrs. Cranston had *Mdme. Charles Wood*, *Star of Waltham*; *Marie Rady*, and *Marie Baumann* in splendid condition. Messrs. Cheal and Sons, *Crawley*, also had a neat box.

In twelves (class 10) there was a fine stand from Mr. Frank Cant, with good boxes from Messrs. Keynes, Williams & Co., Cranston & Co., and Mr. E. Mawley, *Rose Bank*, *Berkhamstead*.

Teas and *Noisettes* (twenty-four varieties) were represented by five stands, which contributed a most pleasing display. The Rev. F. Burnside's blooms were, though small, in beautiful condition and admirably arranged. Mr. G. Prince of Oxford showed *Madame Cusin*, *Madame Watteville*, *Comtesse de Nadaillac*, and *Alba Rosea* very finely, and all his flowers were good. Mr. F. Cant's blooms were splendid. *Madame Cusin* was superb, while *Niphetos*, *Madame de Watteville*, and *Innocente Pirola* were little inferior to it. Messrs. Cranston and Burrell also had charming stands. Twelves were shown by the growers already named. Mr. F. Cant had a fine *Catherine Mermet*, and Mr. G. Prince a superb *Niphetos*.

Teas in bunches formed a delightful display, especially where freely assisted with foliage, as in Mr. G. Prince's stand. These comprised exquisite blooms of buttonhole size. Messrs. Paul & Son, *Cheshunt*, and G. Bunyard, *Maidstone*, also had beautiful stands, the whole forming a charming feature, and awakening covetousness in many a breast. Such varieties as *Madame de Watteville*, *Caroline Kuster*, *The Bride*, *Etoile de Lyon*, *Mons. Furtado*, *Marie Van Houtte*, *Madame Bravy*, and *Marquise de Vivens*, were exquisite.

There was only one collection of *Polyanthas*, this coming from Messrs. W. Paul of Waltham Cross, and comprising *Gloire des Polyanthes*, *Princess des Pays-Bas*, *Little Dot*, *Georges Pernet*, *Perle d'Or*, and *Anne Marie de Montravel* amongst others.

There were two collections of *Chinas*, one from Messrs. Bunyard and Co., the other from Messrs. William Paul & Son. In the former *Fellenberg*, *Duchess*, *Crimson China*, and *Common or Blush China* were the best; in the latter *Cramoisie Supérieure*, *Duchess*, *Little Dot*, *Louis Philippe*, *Mrs. Bosanquet*, and the *Common*.

In the class for exhibits relating to wild species of *Roses* there were

several exhibits, but these came more especially under consideration on the second day, which was devoted to botanical subjects. From the Royal Gardens, *Kew*, came a collection of *Roses* arranged in the following groups:—*Systylæ*—comprising *R. moschata*, *R. polyantha*, *R. capreolata*, *R. sempervirens*, *R. nivea*, and *R. stylosa*. *Banksianæ*—*R. sinica* (not in flower). *Cinnamomeæ*—*R. cinnamomea*, *R. carolina*, *R. lucida*, *R. nitida*, *R. rugosa*, *R. anserinifolia*, *R. pisocarpa*, and *R. nutkana* (nearly all in flower). *Pimpinellifoliæ*—representing *R. acaulis*, *R. myriacantha*, *R. spinosissima*, *R. hibernica*, and *R. macrophylla*. *Centifoliæ*—including *R. gallica*, *R. centifolia*, *R. damascena*, and *R. burgundica*. *Villosæ*—the chief one *R. tomentosa*. *Caninæ*—showing *R. noisettiana*, *R. canina*, *R. indica*, *R. anemonæflora*. *Rubiginosæ*—comprising *R. rubiginosa* and *R. sepium*.

Mr. R. Irwin Lynch, Curator Botanic Gardens, Cambridge, showed specimens of the following *Roses*:—*R. alpina*, *R. Beggariana* from *Turkestan*, *R. blanda*, *R. canina* var. (*R. dumalis*) or *R. sarmentacea*, which runs up a tree to the height of 25 feet; *R. gallica*, *R. indica* (the "Green Rose"), *R. pumila Redouté*, so called by Professor Crépin, but it was previously called *R. minima*; *R. involuta*, variety *Wilsoni*, *R. lucida*, *R. macrantha*, *R. macrophylla*, *R. Manetti*, *R. polyantha*, *R. repens*, *R. rubiginosa*, *R. rubrifolia*, and *R. rugosa*. *R. gallica*, *R. macrantha*, and the reddish tinted foliage and shoots of *R. rubrifolia* were the most notable, as the others had suffered greatly in transit.

The Rev. J. H. Pemberton, *Havering-atte-Bower*, *Essex*, showed *R. arvensis*, *R. canina*, *R. rubiginosa* (*Sweet Briar*), and an unnamed variety, all gathered wild in *Essex*.

T. W. Girdlestone, Esq., *Sunningdale*, *Berks*, exhibited two charming stands of species and varieties, comprising *R. rugosa*, *R. lucida*, *R. multiflora* varieties, *R. Beggariana*, a small white and graceful *Rose*; *R. rubrifolia*, *R. indica* variety, the pretty yellow, crimson-centred *R. Hardyi*, the small *R. pisocarpa*, with purplish flowers; *R. indica* variety, red and white; *R. macrantha*, large black tinted *R. multiflora*. Other *Roses* shown by Mr. Girdlestone were the *Red Damask*, *Hybrid Sweet Briar*, *Hebe's Lip*, *Rosamène Bardon Job*, single glowing crimson, very handsome; *Noisette l'Idéal*, a peculiar rosy bronze tint, distinct; and *Rosa lucida Rose Button*, a very neat pale crimson bud.

Messrs. Paul & Son, *Cheshunt*, exhibited thirty-six plants of various species, but nearly all were out of flower.

The following awards were announced, but later on the opening day:—

Class 1.—Messrs. Paul & Son and W. Paul & Son silver *Flora* medal, and Mr. W. Rumsey, silver *Banksian* medal.

Class 2.—Messrs. G. Bunyard & Co., silver *Banksian* medal.

Class 8.—Messrs. Cranston & Co., silver *Flora* medal, and Messrs. Keynes, Williams & Co., a silver *Banksian* medal.

Class 9.—Mr. F. Cant, a silver *Banksian* medal.

Class 11.—Mr. G. Prince, a silver *Flora* medal, and Mr. F. Cant, a silver *Banksian* medal.

Class 12.—Messrs. Keynes, Williams & Co. and Mr. G. Prince, silver *Banksian* medals.

Class 17.—Mr. T. W. Girdlestone, a silver *Banksian* medal.

THE CONFERENCE.

A large marquee was appropriated to the purposes of the Conference, and when the President, *Dean Hole*, opened the proceedings with a brief historical address there was a good number of visitors present. Several papers were read during the afternoon. The Secretary has favoured us with abstracts of the following:—

PROFESSOR CRÉPIN'S NEW CLASSIFICATION OF ROSES.

After a short historical introduction, M. Crépin proposes his new scheme, according to which the genus *Rosa* is divided into fifteen sections, the sections being founded on the characters afforded by the styles, the sepals, the inflorescence, the number of leaves on the flowering branches, the stipules, the bracts, the prickles, and the general habit. The sections proposed are—1, *Systylæ*; 2, *Stylosæ*; 3, *Indicæ*; 4, *Banksiæ*; 5, *Galliæ*; 6, *Caninæ*; 7, *Carolinæ*; 8, *Cinnamomeæ*; 9, *Pimpinellifoliæ*; 10, *Luteæ*; 11, *Sericæ*; 12, *Minutifoliæ*; 13, *Bracteate*; 14, *Lævigatæ*; 15, *Microphyllæ*. Each of these sections is described, and the species allotted to it mentioned. In all about sixty species are enumerated.

LORD PENZANCE'S PAPER.

In this paper the writer traced the development of *Rose* culture from the time when the Dutch some seventy to eighty years ago commenced to propagate *Roses* by seed. The example was quickly followed by the French. Adverting to times present, his lordship laments the enfeebled constitution and the absence of perfume which characterise many modern *Roses*.

He regrets also the disappearance of the *Bourbon* *Roses*, the "alba" *Roses*, and the *Perpetual Damasks*.

The introduction of new races is counselled, and the means of obtaining them by hybridising and cross-breeding pointed out. Lord Penzance practises what he preaches, and exhibited various specimens as follows:—

Sweet Briar fertilised by the pollen of H.P. *La Souveraine*. Sown November, 1885, seedling came up in January, 1886.

Sweet Briar fertilised with H.C. *William Jesse*, came up January 1886.

Sweet Briar fertilised with pollen from H.B. *Paul Ricaut*.

Sweet Briar fertilised with pollen from H.C. *William Jesse*.

Luxembourg Moss fertilised with H.P. *Princess Christian*. Seed sown 1884, came up in February, 1885.

ON ROSA POLYANTHA AS A STOCK FOR BUDDING.

BY M. VIVIAND MOREL, LYONS.

The author points out that M. Alegatière, of Lyons, ascertained that the seeds of this species germinate within a month without being stratified, so that the stock can be budded in the first year. Various confirmatory statements by different experimenters are given; amongst others, some by M. Bernaix, who advocates the budding of Roses on seedling Polyantha stocks as specially suitable for pot Roses, and Roses intended for forcing. Such plants come into growth and flower ten to fifteen days earlier than those budded on the Briar, and do not throw up suckers. The stock is as well suited for Teas as for H.P.'s. M. Vivian Morel himself repeated these experiments with the same results.

A comparative trial of Roses for forcing, budded on the seedling Polyantha and on the seedling Briar respectively, and in which the conditions were identical, gave the following results:—Roses budded on the Polyantha stock gave twice the number of flowers that the same variety produced on the Briar, and, further, they were a fortnight earlier.

THE DINNER.—In the evening between sixty and seventy gentlemen, Fellows of the Society and members of the National Rose Society, dined together at the Hotel Métropole, under the chairmanship of Sir Trevor Lawrence, Bart., M.P., President of the Royal Horticultural Society, who was supported on the right by the Very Reverend the Dean of Rochester, M. de la Devansaye, and Dr. Hogg, and on the left by Mr. J. G. Baker and Dr. Masters. The Dean of Rochester proposed "Prosperity to the National Rose Society," coupled with the name of Rev. H. H. D'Ombraïn, the Secretary. Then followed the health of the "President of the Royal Horticultural Society," "The Visitors," responded to by M. de la Devansaye; "The Press," which was responded to by Dr. Master, Dr. Hogg, and Mr. Shirley Hibberd.



FRUIT FORCING.

VINES.—*Early Houses.*—The Grapes having been cut, keep the house as cool as possible by free ventilation, and withdraw the roof lights where practicable when rains prevail. The cleansing effect of rain is very beneficial, and a thorough moistening of the borders will do much towards the production of fresh laterals and the maintenance in health of the principal leaves, thereby preventing premature ripening of the foliage. Vines that are becoming exhausted through long subjection to early forcing and bearing heavy crops should have one of the borders renovated, and the roots laid in fresh material near the surface, for which prepare by getting the material together, as it is important work of this kind be executed at the right time and with despatch. One of the borders only need be operated upon at a time, taking say the inside border one year, and following with the outside border the next. The proper time to attend to the roots in the case of early Vines is as soon as the foliage gives indications of ripening. Syringe the foliage every evening in fine weather to preserve the leaves in a healthy condition as long as possible, for when they die prematurely second growth will commence about the time the Vines ought to be pruned and going to rest.

Houses of Ripe Grapes.—Keep the houses cool, and on hot days sprinkle water on the borders and floors, which will be beneficial. Moderate moisture will not injure ripe Grapes at this season provided it is not stagnant and the temperature is not allowed to advance in the morning before ventilation is increased. A temperature of 55° to 60° will be sufficient for ripe Black Hamburgs at night, but Muscats will need fire heat to prevent the temperature falling below 60° to 65° at night. Turning on the heat in the morning to allow a free circulation will materially assist in the maturing of Muscats even after they appear ripe. Moisture must be carefully guarded against in the case of Muscats, or they soon spot in a moist confined atmosphere. Allow a gentle circulation of air constantly, even if fire heat has to be employed to secure it. A slight shade is absolutely essential to Black Hamburgs keeping colour for any length of time after ripening. Some doubled garden netting drawn over the lights is mostly sufficient. Muscats colour in proportion to the light and heat they receive.

Grapes Ripening.—Ventilate constantly, a circulation of warm rather dry air being essential to good finish. Black Hamburgs and similar varieties need only have a night temperature of 60° to 65°, and 70° to 75° by day; but Muscats require 70° to 75° at night, and 80° to 85° by day, advancing with sun heat to 90° or 95°. If there is likely to be any deficiency of moisture in the borders, give a thorough soaking, choosing the early part of a fine day, and ventilate freely. Mulching with short dry material will prevent any danger of moisture arising to the injury of the crop. Admit plenty of air after the Grapes change colour.

Grapes Stoning.—Dull weather, with occasional gleams of sun is the worst for scorching and scalding Grapes. It is best to have a little

fire heat to prevent a low night temperature, and admit of early ventilation to prevent the deposition of moisture upon the berries. If they are allowed to be covered with moisture, and the sun raises the temperature considerably before ventilation is given, the leaves and berries will assuredly suffer. A little heat and free early ventilation are the preventives of scorching and scalding. When the stoning is over, and the fruit commences ripening, danger from scalding is considered past, but Muscat of Alexandria is often scorched badly even after the Grapes are advanced in colour, and a slight shade as that of garden nets drawn over the roof lights is of great benefit.

Late Houses of Black Hamburgs.—The thinning must be concluded without delay. Thin well, but not unduly, and remove surplus bunches if there be any doubt about the crop, for Black Hamburgs to hang well must be as thick in the skin, as firm in flesh, and as highly finished as possible. It is nonsense expecting crops that do not finish higher in colour than a reddish black to hang well, for they will only disappoint. Either they must be black and have as much bloom as Sloes, or they will not keep colour long. Allow a fair amount of lateral growth, as Grapes of this class finish better with a modified light, but avoid overcrowding.

TRADE CATALOGUES RECEIVED.

E. H. Krelage & Son, Haarlam, Holland.—*Wholesale Catalogue of Bulbs and Tubers.*

Damman & Co., San Giovanni a Teduccio, Naples, Italy.—*Wholesale Catalogue of Bulbs and Tubers.*



•• All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Insects (T. M.).—We cannot undertake to name insects "caught in fields" without any reference to the crops they attack.

Twin Cucumbers (W. Day).—Such examples are neither very common nor very rare. We have one or more sent to us every year, and now and then three or four at once. Still they are not produced by one plant out of a hundred, and cannot be perpetuated by seed or cuttings, the jointure being accidental, not constitutional.

Pelargonium Sport (G. J. & Co.).—We regret that in the absence of a little gum for sealing the petals, and the want of packing to keep them fresh, that the whole were either shaken off or so much curled and withered as to render any satisfactory comparison impossible. One flower is evidently much richer in colour than the loose petals of the others, and resembles the variety named Dr. Masters.

Seedling Carnation (H. A. M.).—The flowers arrived in such a withered state, through want of suitable packing, that it is impossible to determine the merits of the variety. It is as disappointing to us as it must be to the senders of flowers for our opinion, or naming, to find that they arrive in what must be a totally different condition from that in which they were when gathered. It is essential that they reach us in a fresh state, as is almost invariably the case when packed according to our standing instructions below.

Gall on Poplars (T. L., Canterbury).—The twigs of Poplar sent are to some extent infested with aphides, but the curious galls or protuberances are the work of a species of Psylla, specimens of which in an adult stage are crawling about the leaves. Many of the Psyllidæ are mistaken for aphides, and they are nearly related; but a Psylla leaps in its perfect condition as well as flies, which an aphid never does. Some of the Psyllidæ protect themselves from the weather by twisting and contorting buds or leaves, but this Poplar-haunting species forms a more secure abode by piercing the twigs so as to produce a swelling, within which a crowd of these insects in various stages may be found closely packed. Towards the autumn the galls will be deserted. It is not known at present how these insects pass the winter. The same applications are of utility which are successful in the destruction of kindred aphides.

Pansies Failing (M. J. E.).—We do not think the injury to the stems some distance below the surface is caused by slugs; nor are we

certain that it is the work of grubs, though it may be. You give no indication of the time you planted the Pansies. When planted in the spring, and a term of cold weather follows, preventing their quick establishment, dry hot weather succeeding, the plants are almost certain to fail. They can only resist the effects of hot weather when the roots are working freely and deeply in good moist soil, and when not so working the stems shrink and the plants wither. More Pansies fail through late spring planting, especially shallow planting in poor soil, than through any other mistake that is made. If your garden is infested with grubs, however, it may be naturally expected they would attack the plants. The nature of the soil and time of planting are such important factors in the case that, in the absence of information thereon, we are unable to give a more definite reply.

Peas Withering (N. H. P.).—If a number of Notts gardeners "put their heads together" over a "new disease" without obtaining light concerning it, the origin of the evil must be very obscure and the remedy proportionately difficult to determine. We have had Peas similarly affected to those you send from time to time during the past forty years. The stems shrink just within the soil, and the leaves wither upwards. As it has only occurred with us occasionally, in other years the growth being satisfactory, we have attributed the collapse to weather influences. It would perhaps be worth while sending samples to the Scientific Committee of the Royal Horticultural Society, which next meets on the 23rd inst. at 117, Victoria Street, Westminster. What is known as the gangrene in Winter Spinach is common in some soils, seldom occurring in others. Have you tried sowing in deep drills of wood ashes along the tops of ridges, the same as those made by farmers for Turnips, but narrower? We have with advantage; hence concluded the mischief was not at the end of the roots but near the surface of the soil.

Peach Trees Unfruitful (T.).—The unfruitfulness is probably a consequence of over-luxuriance, the soil being too rich and too loose. We should thin out the wood now, in fact cut away all not required for furnishing the trees with extension and fruiting wood for the ensuing season, leaving no more than can have full exposure to light and air, it being important that the growth be thoroughly solidified as made, the sap duly elaborated, and the assimilated matter stored in the wood and buds. In the autumn, when the leaves give indications of falling, the trees may be lifted and have the roots laid in fresh soil nearer the surface, or the old soil may be used, adding to it some mortar rubbish, about a sixth not being too much if the soil is deficient in calcareous matter, and if it is light add a fourth of clay marl in as divisible parts as practicable. Work the soil well amongst the roots and make it firm. Avoid manure in the border, though a little may be used in a lumpy state as a mulch with a view to uniform moisture and encouraging and preserving surface roots. With proper treatment in other respects, which may be gleaned from our Work for the Week column, the trees ought to bear fruit. The crops of Peaches and Nectarines are not very satisfactory this season, the result, probably, of the sunless and moist weather of last year.

Rose Manure (Kittie).—We have no experience of the manure you mention, and from its constituents have very little faith in it as an aid to anything beyond succulent growth. Nitrogenous manures do not tend to form solidified growths, which give the finest and most abundant blooms. Not knowing the condition of your Roses, we cannot say the mixture would not do good, but we can say it would only be of benefit with phosphatic ingredients in the soil. If you use it a thorough watering should be given at least once a week after the buds show, unless the weather be wet, when less frequent applications will be necessary, continuing them until the Roses have done blooming, and when they are in growth again for a late bloom recourse may be had to the manure as assisting the developing buds. Nitrates promote growth, but, if used alone, at the expense of flowers and fruit. We find it better to use muriate of potash and superphosphate of lime, 1 lb. of the former and 3 lbs. of the latter per rod, as a surface dressing in spring, and again early in June, merely scratching or pointing in lightly with a fork. The results on blooms to which the liquid you mention is applied must be infinitesimal on those that will develop ten days hence, as the bloom is dependent on the matter available during the whole of its formation. The formula represents an imperfect manure.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. W.).—1, *Cheilanthes elegans*; 2, *Doodia aspera*; 3, *Osmunda gracilis*; 4, *Phlebodium aureum*. (C. A. L.).—1, *Spirea Filipendula flore-pleno*; 2, *Tradescantia virginica*; 3, *Lychnis chalcidonica*; 4, *Winter Savory*; 5, *Pot Marjoram*; 6, *Tarragon*. (J. H., *Leamington*).—1, *Stachys lanata*; 2, *Agrostemma coronaria* (the Rose Campton); 3, *Linaria bipartita*; 4, *Physalis Alkekengi*; 5, *Dictamnus Fraxinella alba*. (W. C.).—We have no flowers from you. We shall be glad to assist in naming any which arrive in good condition. Some are lost in the post through being sent in fragile boxes. Please include the full title of this Journal in the address of packages.

Uniting Bees (Novice).—Your letter cannot be satisfactorily answered this week, and you will gain by waiting for a future issue.

COVENT GARDEN MARKET.—JULY 3RD.

A steady business doing, with good supplies.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	2 0	to 8 0	Lettuce, dozen ..	0 9	to 1 3
Asparagus, bundle ..	2 0	5 0	Mushrooms, punnet ..	0 6	1 0
Beans, Kidney, per lb. ..	0 3	0 6	Mustard & Cress, punnet ..	0 2	0 0
Beet, Red, dozen ..	1 0	2 0	New Potatoes, per cwt. ..	8 0	9 0
Broccoli, bundle ..	0 0	0 0	Onions, bushel ..	8 0	4 0
Brussels Sprouts, ½ sieve ..	0 0	0 0	Parsley, dozen bunches ..	2 0	3 0
Cabbage, dozen ..	1 6	0 0	Parsnips, dozen ..	1 0	0 0
Capsicums, per 100 ..	0 0	0 0	Potatoes, per cwt. ..	4 0	5 0
Carrots, bunch ..	0 4	0 0	" Kidney, per cwt. ..	4 0	8 0
Caniflowers, dozen ..	2 0	4 0	Rhubarb, bundle ..	0 2	0 0
Celery, bundle ..	1 6	2 0	Salsify, bundle ..	1 0	1 6
Coleworts, doz. bunches ..	2 0	4 0	Scorzonera, bundle ..	1 6	0 0
Cucumbers, each ..	0 3	0 6	Shallots, per lb. ..	0 3	0 0
Endive, dozen ..	1 0	2 0	Spinach, bushel ..	3 0	4 0
Herbs, bunch ..	0 2	0 0	Tomatoes, per lb. ..	0 6	0 9
Leeks, bunch ..	0 3	0 4	Turnips, bunch ..	0 4	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ..	2 0	to 4 0	Oranges, per 100 ..	4 0	to 9 0
" Nova Scotia and ..	7 0	16 0	Peaches, dozen ..	12 0	18 0
" Canada, per barrel ..	7 0	16 0	Pears, dozen ..	0 0	0 0
Cherries, ½ sieve ..	6 0	13 0	Plums, ½ sieve ..	0 0	0 0
Grapes, per lb. ..	1 0	3 0	St. Michael Pine, each ..	2 0	6 0
Lemons, case ..	10 0	15 0	Strawberries, per lb. ..	0 3	0 9

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2 0	to 6 0	Narcissus (various) ..	0 0	to 0 0
Asters (Fr.), per bunch ..	1 0	2 6	Pansies, dozen bunches ..	1 0	3 0
Bouvardias, bunch ..	0 6	1 0	Pelargoniums, 12 trusses ..	0 9	1 0
Cactus, dozen blooms ..	1 6	2 0	" scarlet, 12 bunches ..	3 0	6 0
Carnations, 12 blooms ..	1 0	2 0	Paeonies, dozen blooms ..	0 0	0 0
Cineraria, per bunch ..	0 6	1 0	Pinks (various) 12 bunches ..	3 0	6 0
Cornflower, doz. bunches ..	1 0	4 0	Polyanthus, doz. bunches ..	0 0	0 0
Eucharis, dozen ..	2 6	5 0	Pyrethrum English White ..	0 4	0 6
Gardenias, 12 blooms ..	2 0	4 0	" 12 blooms ..	0 4	0 6
Glaucol, per bunch ..	0 6	1 6	" English Coloured, ..	0 2	0 4
Iris, dozen bunches ..	4 0	9 0	" 12 blooms ..	0 6	1 6
Lilac, White (French), ..	3 0	5 0	Roses, Moss, doz. bunches ..	6 0	12 0
per bunch ..	3 0	5 0	" (indoor), dozen ..	0 6	1 6
Lilium candidum, doz. ..	0 9	1 6	" Mixed, doz. bunches ..	3 0	6 0
Lilium longiflorum, 12 ..	2 0	5 0	" Red, dozen bunches ..	4 0	9 0
Lapagaria, 12 blooms ..	1 0	2 6	" 12 blooms ..	1 0	2 0
Maidenhair Fern, doz. ..	4 0	9 0	" Tea, white, dozen ..	1 0	3 0
bunches ..	4 0	9 0	" Yellow ..	2 0	6 0
Marguerites, 12 bunches ..	2 0	6 0	Spirea, dozen bunches ..	4 0	8 0
Mignonette, 12 bunches ..	3 0	6 0	Stephanotis, doz. sprays ..	2 0	3 0
Myosotis or Forgetmenots ..	1 6	4 0	Sweet Peas, doz. bunches ..	3 0	6 0
doz. bunches ..	1 6	4 0	Sweet Sultan, ..	4 0	6 0
			Tuberose, 12 blooms ..	0 6	1 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	8 0	to 12 0	Ficus elastica, each ..	1 6	to 7 0
Arum Lilies, per dozen ..	9 0	12 0	Foliage plants, var., each ..	2 0	10 0
Arborvitae (golden), dozen ..	12 0	24 0	Fuchsia, per dozen ..	4 0	9 0
Asters, 12 pots ..	0 0	0 0	Geraniums, Ivy, doz. ..	3 0	5 0
Begonias, various, per doz. ..	4 0	12 0	Hydrangea, per dozen ..	9 0	18 0
Bedding plants in variety, ..	1 0	0 0	Lobelia, per dozen ..	3 0	6 0
per doz. from ..	1 0	0 0	Marguerite Daisy, dozen ..	6 0	12 0
Bedding plants, bxs., each ..	1 6	2 6	Mignonette, per dozen ..	3 0	6 0
Caladiums, per doz. ..	12 0	18 0	Musk, per dozen ..	3 0	4 0
Calceolarias, per dozen ..	4 0	8 0	Myrtles, dozen ..	6 0	12 0
" Herbaceous ..	6 0	12 0	Nasturtiums, per dozen ..	2 6	4 0
Christmas Rose ..	0 0	0 0	Palms, in var., each ..	2 6	21 0
Cineraria, per dozen ..	0 0	0 0	Pelargoniums, scarlet, 12 ..	2 6	6 0
Dracena terminalis, doz. ..	24 0	42 0	Pelargoniums, per dozen ..	6 0	18 0
Dracena viridis, doz. ..	12 0	24 0	Rhodanthe, per dozen ..	6 0	9 0
Erica Cavendishii, doz. ..	0 0	0 0	Saxatraga pyramidalis, ..	9 0	18 0
" various, doz. ..	12 0	24 0	per dozen ..	9 0	18 0
Eucynymus, var., dozen ..	6 0	18 0	Spirea, per dozen ..	6 0	12 0
Evergreens, in var., dozen ..	6 0	24 0	" palmata, per doz. ..	12 0	24 0
Ferns, in variety, dozen ..	4 0	18 0	Stocks, per dozen ..	3 0	4 0



MIDSUMMER BUTTER.

AFTER "haysel," when cows are on the aftermath, is the time when the milk is at its best. The glossy coats and sleek condition of the cows then afford the best evidence of good health. It does more, it shows the true value of pure food, pure water, pure air; and it is then that the best butter is made, for it is alike excellent in colour and flavour. Unfortunately for the producer, it is then that the price falls so low that he is unable to get more than half the price which really good butter commands in winter. Advice is now literally showered upon the British farmer, and among other things he has quite recently been told that he should do as foreigners do, and stop making butter to a very great extent when there is such a glut of it in the market. Now, every practical man knows that

such advice is simple nonsense, and if such would-be leaders of the farmer would show him how to preserve his butter so as to hold it in reserve till winter that would indeed be helping him.

It has long been customary at our home farm to save all superfluous aftermath butter in crocks for winter use, and we regret to say the butter so saved is not invariably good when used. It is good enough sometimes, at others it is rank, and that is all the more vexatious because it is evident that by careful management all of it might be good. The crocks should be deep, with the entire surface glazed inside and outside, and not with the bottom part outside left unglazed, as is so frequently the case. Each crock should be filled at once and not gradually, and the top of the crock should be covered so as to exclude air till it is opened in winter for use. Many dairywomen consider it sufficient if they pour enough brine upon the top of the butter to cover it to the depth of half an inch, and then cover with paper or an earthenware lid; but it is not, for it is self-evident if the butter is really well made and kept from the air till required for use it may fairly be expected to prove good then.

Formerly the chief agent used as a preservative in crocked butter was salt at the rate of 1 oz. per lb., with a pinch of saltpetre, but now both salt and saltpetre have been discarded for glaciline, a harmless, tasteless, odourless antiseptic. This is both a preservative and a neutralising agent, the latter property being especially useful in winter to dispel taints imparted by food to milk, and the former is turned to account in summer first of all in the milk, which it prevents turning sour prematurely, and so enables all the cream to rise, and afterwards in the butter to preserve it for winter use. Glaciline is made by the Antitropic Company, Glasgow, but it is becoming so well known that it can be obtained of most dealers in dairy goods. We have recently heard it highly spoken of by Cheshire farmers.

That a steady and improving trade for home dairy produce is now being built up there can be no doubt, and it is the end and aim of all the lectures, conferences, dairy exhibitions, and butter-making contests to assist such efforts. To attract and sustain such a trade there must be a high uniform degree of excellence in conjunction with a regular and full supply. Flavour, colour, texture, must always be up to a certain standard, never below it, and there can be no doubt that well preserved midsummer butter might serve to keep up the standard of quality in winter by mixing a certain quantity of it with the fresh butter with the butter worker. To do this successfully there must be no hit-or-miss guess work; precision depends on weight and measure applied under the guidance of experience tempered by sound judgment. A few careful experiments should suffice to show the quantity and manipulation that is necessary to success. Nothing can be more erroneous than the popular idea that it is impossible to ensure uniform quality in butter, for it is an accomplished fact, of which the best proof is afforded by the heavy importation of such butter.

It is in winter particularly that foreign butter is so much in request. To successfully compete with the farmers of Normandy and Denmark, not only must we do what is possible with midsummer butter, but we must contrive to have plenty of fresh—i.e., newly calved cows, coming in to assist the dairy supply in autumn and winter. This is not difficult, nor is it difficult to have milk that is pure and sweet without taint of any kind then, provided our dietary is correct and the cows are looked after closely. If there are Walnut trees on the pasture, milk troubles in autumn generally begin with the fall of the leaves if the cows can get at them, the acrid flavour thus imparted to the milk quite spoiling it for butter. As the use of silage spreads we feel hopeful that it will do much for the improvement of our winter butter, and serve to counterbalance the effect of dry food, and eventually enable us to discard all roots except perhaps Carrots from the dietary of dairy cows in winter. In summer it should suffice to look to our pastures and see that they contain nothing but the most nutritious sorts of grass and Clover. No doubt there is much need for

improvement in this direction, for in no branch of agriculture has there been greater negligence than in the cultivation of pasture.

WORK ON THE HOME FARM.

Progress with haymaking has been entirely satisfactory, mowing, making, and carting having been done daily with an amount of mechanical precision that is owing altogether to fine weather. Some care has been necessary not to overdry the hay before carting, for with such hot dry weather there is some risk of not having enough heat in the stacks to develop aroma and render the hay as palatable as possible. Mangolds and early Swedes are all hoed, singled, well established in the soil, and are growing freely. The later crops of Turnips are not yet in so satisfactory a condition, and the sowing of more altogether depends upon the weather. Cabbage and Thousand-headed Kale are all doing well, the showery weather in the earlier stages of growth having rendered them fine sturdy plants that are now sufficiently vigorous to bear much hot dry weather with impunity. On the whole the outlook for another winter is very satisfactory. The hay crop is full, abundant, and of excellent quality. Roots will be plentiful; silage cannot fail of being so, for there is an almost bewildering choice of crops for making it, all equally vigorous and abundant. On all well cultivated soil the corn crops are satisfactory. The Wheat is now nicely in bloom. Spring corn is in full ear, but as usual there is an extraordinary degree of difference in the appearance of Barley. On the day of writing this note we have seen Barley coming into ear that was hardly a foot in height, and other Barley nearly a yard in height, and we knew that in each instance the appearance of the corn was altogether owing to the condition of the land, and not to any peculiarity of the season. Depend upon it good farming always tells, and in an average season it answers. No regard must be had to such a season as that of last year, but even then good farming told.

Folding of lambs and sheep upon Sainfoin is ended for the present, and many of the lambs have been sold at very profitable prices. Wool is perhaps a little higher in price than it was last year, but the difference is one of fractions rather than units. Lambs are not sent upon the markets at all freely. Every farmer who can is evidently holding back as many as possible to fatten for hoggets or to add to the breeding flock. In buying lambs for store hoggets to keep over till next spring it is well to avoid those which have been forced on by high feeding, and rather to choose those in a healthy growing condition.

HONOURS FOR SEED CORN AT WINDSOR.—We are desired to state that in the great competition for seed corn at the Jubilee Show of the Royal Agricultural Society both the first and second prizes were awarded to customers of Messrs. James Carter & Co. We are informed that His Royal Highness the Prince of Wales during his visit to the Show personally requested Messrs. Carter to reserve for His Royal Highness a collection of their cross-bred Wheats, which it is the intention of the firm to distribute to the public this autumn. A collection has also been ordered by the Queen.

MR. MARTIN J. SUTTON'S KERRY CATTLE AT WINDSOR.—Having admired the beautiful animals at Dyson's Wood, we have obtained the following particulars of Mr. Sutton's entries of Kerries and Dexters at Windsor last week:—In Class 148 (cows in milk or in calf, calved previous to or in 1886, forty-seven entries), he obtained third prize with Flora, and he with Vernal. In Class 150 (bulls, twelve entries) third with Paradox. In class 151 (cows or heifers in milk or in calf, calved previous to, or in 1886, fifty entries), first prize with Rosemary, and third with Peach. In this class two other animals, Beauty and Silene, were highly commended. In the competition for the Queen's gold medal, Rosemary was left in with Mr. J. Robertson's Limelight. The prize was ultimately awarded to the latter, as being the younger animal, though not until an extra judge had been called in to assist in deciding the award.

METEOROLOGICAL OBSERVATIONS.

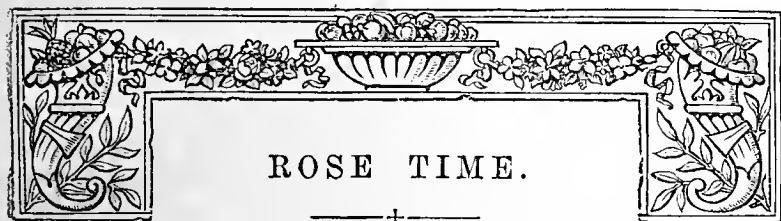
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1889.		Baromet- ter at 8 a.m. and 8 p.m. Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
June.			Dry.	Wet.			Max.	Min.	In sun.	On grass		
Sunday	23	Inches.	deg.	deg.	N. E.	deg.	deg.	deg.	deg.	deg.	In.	
Monday	24	30.974	61.0	55.2	N. E.	63.0	72.0	81.2	117.6	47.7	—	
Tuesday	25	30.939	57.7	55.7	N. E.	62.9	70.8	83.1	109.9	49.2	—	
Wednesday ..	26	30.990	61.2	57.1	N. N. E.	62.2	75.7	84.0	112.3	51.8	—	
Thursday	27	30.112	69.4	61.6	N. E.	62.3	80.7	82.4	123.0	44.6	—	
Friday	28	30.051	71.1	62.2	N. E.	64.2	81.4	86.1	131.4	50.3	—	
Saturday	29	30.079	67.9	60.9	N. E.	65.0	77.2	85.3	101.2	5.2	—	
		30.175	65.4	63.9	N.	64.9	79.3	87.0	111.2	52.8	—	
		30.087	65.2	59.7		63.5	71.3	84.2	114.2	49.8	—	

REMARKS.

23 d.—Cloudy till about 11 A.M., then fine and bright.
24th.—Cloudy morning, with slight shower about 9 A.M.; some sunshine in afternoon.
25th.—Fine, bright, and warm.
26th.—Bright and hot.
27th.—Hot and generally bright, but cloudy at times.
28th.—Warm and rather close.
29th.—Fine and rather hazy, with occasional cloud.
A week of rainless summer weather. Temperature about 5° above the average. The 29th was the fourteenth consecutive day with out rain.—G. J. SYMONS.



ROSE TIME.

ROSE time is a pleasant time to many, but a busy, even a bustling time, to some, and Rose shows are great events in the floral world, in which thousands of persons are interested. They are looked forward to and prepared for months in advance; and, apart from the beauty of the displays, the occasions afford pleasant opportunities for the meeting of friends who strive to excel each other in the production of the Queen of Summer. Moreover, Rose shows as a rule are the most popular of floral exhibitions; but there are exceptions, and in some provincial towns visitors do not crowd into the halls and tents in anything like the numbers that the managers desire, and which, considering the labour gratuitously given, they are justified in expecting. Time appears to be required for arousing public interest even in the Rose, but when once the spirit of enthusiasm is awakened it spreads rapidly and does not quickly subside.

If the appetite grows with what it feeds upon in anything it is on Roses. Persons there are, and not a few, who have tasted of the pleasures which Roses afford in childhood, and have continued feasting on their charms to manhood and old age. They work amongst them and for them unceasingly, with a zeal that seems untiring. This devotion to a flower so pure, brilliant, and sweet, and one that so well requites all the care bestowed on its production when that which is uncontrollable—the weather—is favourable to its development, is admirable. But even the impediments which have to be contended against in this respect are not altogether to be deplored. The earnest man rather rejoices in a difficulty for the pleasure of surmounting it, and there are various obstacles in connection with the growing and showing of Roses; but no matter of what nature, nor how great they may be, the blooms come when the time comes for them. They may be dashed by the rains one year, and scorched by the sun another. The show fixtures may be too early or too late, but in some way and from somewhere the Roses come and the prizes go. There is never a total collapse in the aggregate, but many personal failures, the precursors perhaps of future triumphs. Hope seems always existent in a rosarian's breast. He may be in "bad form" this year, but looks cheerfully to the next for the smiles of fortune on his efforts, and he wins them sooner or later if he proceeds on sound lines perseveringly.

Rose time is a pleasant time when the sun shines not too brightly, but an anxious and an arduous time to those who engage in the contests. It means work with little intermission; days of activity with nights of travel; a rushing to and fro, always moving, never resting, and it may be when an opportunity for repose comes all the beds are taken. An instance may be cited. One of the great exhibitors of the year and a notable prizewinner arrived in London, proceeding to an hotel in Fleet Street, which has been mentioned before in the *Journal*—Anderton's. Though well known there he was told with many regrets he could not be accommodated. He drove to the great building at Charing Cross, but it was full. Eastwards he rushed to Cannon Street, but the same fate awaited him. On he went to the Manchester, only to be disappointed. He would try Liverpool Street, still he met again with the familiar response, "No room, sir." "But you must find room, I must have a room if I give a sovereign for it." "You cannot have one if you give five." Thus he sought for shelter in

the great city, spending 5s. or 6s. in cab fares driving to and fro, and it was not till a railway inspector took pity on him that he could see an end to his trouble by being taken into the inspector's office to enjoy the luxury of sleeping in a chair.

Rose time, too, is literally a pressing time to another class of individuals who have something to do with the shows—men of the fourth estate—the press. Early and private views are commonly accorded for aiding them in their duties, and but for them the public could not have what they need—good and accurate reports. It may be thought easy to take the names and jot down the characters of the flowers, and it is not difficult when reasonable facilities are accorded, but to do this in a surging, jostling crowd—a seething mass of sightseers craning their necks and forcing their way to a front place, and then struggling to keep it—is a most difficult and invidious task. Such was the state of things we are credibly informed at the Crystal Palace on Saturday last. A fine show, perhaps as good as any that the National Rose Society have held at Sydeuham, was robbed of the interest it should have had for rosarians by the extraordinary arrangements which governed it. As a rule shows are open for private inspection from 11 A.M., when the judges commence their duties, until 1 P.M., when the public are admitted. This is in every respect an admirable arrangement, for time is afforded to the judges to devote such consideration to the stands as it is highly desirable should be devoted to them in order to insure accurate and just awards; moreover, it also affords facilities for such reports of the exhibitions being prepared as shall meet the requirements of the many thousands of persons who, though unable to be present, yet take a deep interest in the proceedings, and whose special interest is far more to be studied than that of a heedless holiday throng.

These considerations were entirely disregarded on the occasion now referred to. Flushed and excited by the visit of Royalty, the Palace authorities thrust the splendid Exhibition of the National Rose Society into a corner, and practically left it to take its chance, tardily affording facilities for what was described as an "early view" at 12 A.M., although as the public were admitted at the usual hour, and within a few minutes of the time that the judging of the principal classes was completed, this privilege was practically worthless. Thus hurried through their duties it is not to be expected that the most competent of judges could extend that calm and careful deliberation to the exhibits which is so eminently desirable, and the representatives of the press were still further embarrassed in their endeavours to discharge a public duty in an adequate manner. A determined effort was made by the busy penmen to register the names of the winners and the winning blooms. To do what they wished was almost impossible, and some gave up the task in despair. The *Journal* representative, being of an unyielding disposition, forced his way along the stands and took the names as best he could. He hopes his report is accurate, but has no one to thank for consideration extended.

So far as we can learn it was a day of Shah on the brain at the Palace last Saturday, and Rose lovers who count upon the National Show as a day of enjoyment, when the best productions of the greatest growers can be studied, the flower in all its numerous varieties discussed, and pleasant converse held upon the varieties, must have been somewhat disappointed. Perhaps the National Rose Society were in no way to blame, but it is evident that when sensational attractions supervene their interests will not be studied, even when they are the innocent cause of that sensationalism being developed; for without the Rose Show we do not suppose there would have been Royalty at the Crystal Palace on July the 6th. That it was a magnificent exhibition, well calculated to awaken widespread interest and admiration, does not unfortunately improve matters, but rather makes them the more to be regretted.

The Rose time has been brighter and shorter than usual; the

dry hot weather of June and early July brought the flowers out rapidly to fade quickly; but many exhibitors have rejoiced in beautiful stands of blooms.

PRUNING OR NOT PRUNING FRUIT TREES THE FIRST YEAR.

MR. WRIGHT very cleverly criticised my remarks at the late Chiswick Conference (March 21st, page 229, *Journal of Horticulture*), which were to the effect, "That as a general rule I do not advise trees to be pruned the first season of planting;" and he had what appeared at first sight to be a mass of evidence on the other side. At the time those remarks were printed we were very busy, and I venture to return to the subject in a more leisure season in nursery work. It is necessary first to clear the ground. Bear in mind that I was advocating Apple-growing for profit—that is, on an extended scale, and my remarks were never intended for garden practice, though I submit they contain equally good advice there. When fruit trees are planted on a farm, say, it generally falls to the lot of perhaps an inexperienced hand to do the work. The holes are not properly prepared, the ground is not closed and tightened as it should be, and to cheapen the cost the work is often put out by the job; therefore the tree first has half its roots cut off so that it shall require a smaller hole, and to give an appearance of work done the tops are cut off too. The tree is often not staked for some time, winter rains come, the ground becomes soft, the tree blows first one way, then another, and round the collar of each tree a pipe-like opening is made; the few roots left are on the move, so that any new fibres are constantly abraded, and although Nature makes a vigorous effort (generally successful with Plums and Damsons because of their copious roots) Pears, Apples, and Cherries die by thousands on the approach of a dry July. Even if the tree is staked and top-pruned what happens? A few pippy, sappy shoots are made which are not hard and woody enough to cut back for good sound eyes, such as ought to produce shoots to form the foundation of an orchard tree; the consequence is that the head is crowded with sprays of fine wood of no value as a base for a vigorous standard, and in despair, if left to Nature, fruit buds are formed, and then farewell to growth so far as the extension of the trees is concerned, and trees like mops are to be seen by hundreds. This is a picture from actual fact, and often in defiance of warnings from ourselves.

On the other hand, under the plan I advocate for orchard or plantation trees, at planting the roots are only partially shortened, the head if crowded has superfluous shoots removed, and the rest are left on the full length. At the earliest leafing foliage starts from the whole of the buds, at once stimulating root action. This increases rapidly, so that the tree starts on its career without loss of time. My opponent says "Yes, and form a lot of useless fruit spurs, and you lose all the wood buds at the base." I admit they are lost to sight, but only sleeping—wait until next spring—the tree is pruned, and it seems hard to cut away all that promise of fruit; but see all these sleeping buds begin to work, and from them there issues a strong wood growth, which clothes the head with healthy stout growths, and at once the form of a basin-shaped head makes itself apparent. I like to thin the centre of any useless wood in August; these shoots are shortened to 3 or 4 inches the following spring, and this operation doubles the shoots and induces stout wood.

I am aware that our Kent system differs from the practice of some counties (see Mr. Molyneux's notes, 251), but I believe this severe pruning in the earlier stages of the tree productive of the utmost after value. It is well known that if a tree begins to bear the growth is retarded by the demand made on it by the fruit. I never intended to say to gardeners, Do not prune the first year in garden culture, nor do I allude to bush trees at all. Experienced men know full well the capabilities of their own soils, and I have seen trees of all sorts pruned the first year doing well, but I am bound to say I have seen trees pruned the second year doing better. Stone fruit trees may be pruned with less danger than pip or kernel fruit trees, but Cherries for orchards are far better left one year. I have very carefully noted the difference where trees have by chance been pruned in the nursery the first year, and on pyramidal and trained trees of Apples, Pears, and Plums the trees are far better when allowed a year's run after removal. They never fail to break from the two-year-old wood, and as far as the formation of a tree is concerned the fruit buds are formed say at the upper three-quarters of the shoot. The portion at the base will always contain enough wood buds to refurbish the tree in whatever form is required. This is what many of your correspondents overlook.

Peaches and Nectarines should be pruned the first year. I may mention that in 1856 I planted some hundreds of trees myself in

an old orchard, which our then old nursery foreman said was tree sick, and failure could only follow my labours; but the whole of the trees treated as I advise made fine examples, and on the expiration of our tenancy the fruit fetched as many pounds as it did shillings before I began. If any of your readers favour me with a call I shall be happy to demonstrate my theory by pointing out successful practice.

In the earlier part of the article, "In nurseries sickly trees were taken up and put in thickly and planted in what was called the hospital, &c." Here, I am afraid, I did not make myself clear. When a quarter containing, say, fifty kinds of fruit gets thin, some being cleared, others partially so, our practice is to take up and place them together. During this operation any sickly or injured trees are cast out. I am afraid the word hospital led Mr. Wright to infer sickness, but as a fact the trees replanted are as healthy as the rest, only they may be of forms not then wanted or under saleable size, as all growers know that it is rare for a row of 100 trees to be fit for sale the same year. They are left unpruned until the following year, and after two summers' growth are fit for sale.

The interesting notes by Messrs. G. Abbey, A. Young, and Walter Kruse (page 272) throw various lights on the subject. I have disposed of some of their objections, and quite agree with Mr. Young. Mr. Kruse plants principally on the Paradise stocks full of roots. Market trees are generally on the Crab stock, but both benefit by being left uncut for a year. Mr. Kruse is a very intelligent grower who sees the work done, and were all cultivators like him I could relax my dictum. Good nursery cultivation means good trees, and good roots also. Our practice differs entirely from Mr. Abbey's ideas (page 271) as to left-over trees. It is precisely late-planted trees that we find most benefited by a year's growth before pruning. It is a fact that trees planted before December 1st make roots by the spring, and it is also the case that late-planted fruit trees are frequently killed by being pruned at planting time.

The matter has been well discussed, and opinions are divided on it as I expected. My desire is to see fruit more intelligently cultivated, and every detail should be brought out that can help the cultivator. Mulching is valuable assistance to heavily cropped trees at this season. Some standard trees have borne for nearly ten years in succession here, where this has been carried out.—GEO. BUNYARD.

NOTES ON MYOSOTISES.

INVALUABLE as the common forms of *Myosotis dissitiflora* are for spring bedding arrangements, their usefulness is enhanced by their ready adaptation to pot culture for early flowering with slight forcing, especially in view of the improved size and colour of the flowers. A recent visit to the establishment of Mr. Virgo, in the warm, sheltered, and picturesque valley of Walton-in-Gordano, not far from the cosy little watering place of Clevedon, disclosed to me a sight not easily forgotten in healthy vigour and floriferousness. *Myosotises* were evidently at home, thousands of plants averaging a foot to 18 inches in diameter, planted in beds of about 8 feet in width, and collectively covering several acres, formed a floral ocean of the softest azure blue imaginable. The cutting and tying of the flowers for market was proceeding briskly; small bunches of from six to eight sprays were being packed into shallow boxes for dispatch to London, Birmingham, Manchester, Bristol, and other centres, where they always find a ready sale.

Careful selection has done much towards the improvement of the plant, coupled, no doubt, with good cultivation and the peculiar suitability of the soil in the neighbourhood for imparting the rich deep colour which is so much admired in the flowers, although by reports from different parts of the country it appears to adapt itself to almost any soil or situation. In this neighbourhood the soil appears to be of a rich ferruginous loam, resting on deep beds of carboniferous limestone—just the sort of soil that would produce the blue colour in the *Hydrangea*, and evidently in the case of *Forget-me-nots* its influence is somewhat similar.

The bulk of the plants are propagated annually by cuttings taken as soon as the plants have flowered, which is generally towards the end of June; these inserted in a frame placed in a cool shady corner root freely, and are then planted in their permanent quarters. Although this is the favourite way of propagating the stock, thousands are raised annually from seed with the object of improving the strain. Several distinct varieties have been selected at various times, and *Blue Perfection* is perhaps the best type of these large-flowering varieties, the flowers of which generally average from half an inch to three-quarters in diameter, and the colour is, as the name implies, a perfect blue. *Undulata* is a pretty fancy variety, with crimped or undulated edges to its flowers, which give it a very distinct appearance. This variety was awarded a first-class certificate at the Royal Botanic Society's show when exhibited there last year, and evidently deserves it. *Compactum* forms a close growing tuft of leaves, from which spring short, sturdy spikes, thickly set with large, well-formed flowers of a somewhat paler hue. This variety will evidently take a front rank for select spring bedding purposes. Several more promising varieties were undergoing a trial in a corner of the enclosure, but as their merits were of an uncertain

character it would be unwise to attempt to describe them. I enclose a sketch of the three varieties that are chiefly grown, but it unfortunately conveys but a faint idea of the lovely hue, yet a comparison of the older varieties of *dissitiflora* will render apparent the great strides that have been made in the improvement of the flowers from a florist's point of view.—M. COOMBE, *Ashton Court Gardens, Bristol*.

[The flowers represented are very large indeed, and indicate considerable improvement in varieties of the species in question.]

DEATH OF THE REV. J. T. BOSCAWEN.

It is our painful duty to announce the death of the Hon. and Rev. J. Townshend Boscawen, Rector of Lamorran, Cornwall. Mr. Boscawen, who was in his seventieth year, was a well-known figure in horticultural circles, and has all his life been a devoted horticulturist. Indeed, he used to boast that he was born a gardener, for in his father's garden at the rectory at Wooton, near Dorking, where he was born, he had his own garden, and there he cultivated the plants agreeable to his taste; and from that time onward to the day of his death he never relinquished his favourite pursuit. He was rector of Lamorran since 1849, and there his garden was his great delight. It is one of those gardens teeming with plants of great botanical and horticultural interest, and the attraction of which was not the decorative style of gardening, but the intrinsic value of the lessons that might be learned there. In vol. xxxiii. of the last series of this Journal, Mr. Luckhurst vividly describes the interesting place in the following words:—

"In a quiet, secluded valley, amidst steep hilly wooded slopes, in a cosy nook at the head of the waters of Lamorran Creek, away from the beaten track of the busy world's highway, is the residence of the Hon. and Rev. J. T. Boscawen, well known to men of science and horticulturists as a wise counsellor and friend, who, although thus living apparently apart from the world, is one of its most busy workers, ever ready to aid in promoting those arts which he loves and understands so well, and who has turned the very quietness and seclusion of his home to good account by solving many a horticultural problem, evolving lessons of such value by the wonderful results obtained in his garden that I can think of no more fitting title for it than that of a book written by the hand of a master, every page of which contains lessons as novel as they are useful.

"It has very lately been my privilege to enjoy the hospitality of Mr. Boscawen—to see his garden, to study the lessons which it teaches, and in some measure to grasp their meaning, sufficiently so I hope to enable me to explain their full significance, and to show how what is really a great and pioneer work may be accomplished within small bounds and without many of those facilities which by many gardeners are considered indispensable to success. It was not long ago that I strongly enforced the importance of planting objects of interest in gardens. At Lamorran this principle was long ago understood and acted upon, and the result in this sense is a garden so abounding in plants and trees that are alike so varied and beautiful as to positively embarrass one. It is a veritable storehouse of treasures rich and rare, so skilfully cultivated and arranged in such good taste as to be always fresh and always attractive."

FLAVOUR OF MELONS.

A FEW weeks ago I purchased half a dozen Melons for a banquet. They were nearly perfect in appearance, a kind well known to be a prizetaker, were very heavy in proportion to size, large and of fine form, and the aroma was rich and almost overpowering. The vendor of these fine fruits has had much experience as a fruit purchaser and salesman, and he is highly trusted. He recommended them (with a large consignment of other purchases) as being Melons which it would be difficult to surpass. Many gentlemen were at this banquet who have high-class gardens of their own and know the quality of fine fruit, but certainly did not have their palates gratified by the flavour of the Melons. Without exception they were flavourless, though possessed of every other desirable quality. This certainly was an experience not conducive to the advancement of the system of judging Melons by sight.—M. T.

CARNATIONS GERMANIA AND MRS. REYNOLDS HOLE.

GERMANIA is an excellent yellow self Carnation. The blooms are a soft canary tint, the flowers full and well formed, and the petals of good substance. The calyx is long and of uniform size, pointed at the apex, and expands with that evenness and uniformity which renders artificial help needless. Far too many of our best flowers among Carnations have an ugly pear-shaped pod which bursts on one side, thereby impairing the beauty of the blooms, but the one under notice is quite different. Luckily, too, it possesses an excellent constitution and produces plenty of good "grass" for layering purposes. It is also freely flowered, the later blooms reaching a good size. I have a few plants of this beautiful variety now in flower, having been grown in a cool house during the winter; the first flowers were fully $2\frac{1}{2}$ inches across, and could have been made to appear much larger by the aid of tweezers had they been required for exhibition purposes. It is, however, unfortunately devoid of fragrance.

Speaking of Carnations reminds me of the charming new colour we have in Mrs. Reynolds Hole, a mixture probably of apricot and salmon,

which is simply unique; but apart from its novel and striking colour it has but little to recommend it; indeed, one very large grower of Carnations in referring to this particular variety expressed himself thus a year ago: "It has but one good quality, all the rest are bad," the one good quality being the colour. The growth is tall and straggling, and in constitution it is far from the best, many having cankered and perished during the past winter. In the first place an abnormal swelling has set in, which eventually burst, and decay was the result. This may have been caused by insects, which played sad havoc with many thousands of Carnations, and the season of 1888 was altogether opposed to Carnation growing. I had good hopes of this Carnation when I flowered it a year ago, for then it appeared strong and robust, sufficiently so to induce our purchasing largely, but the plants exhibited a changed character when they were unpacked, the growth being much weaker. The "grass" is neither so abundant nor so vigorous as heretofore, and a good constitution is a very important item towards popularising flowers such as the *c*; and it will be interesting to note how these new comers will figure in the anticipated Carnation trial at Chiswick.—J. H. E.

STRAWBERRY LATEST OF ALL.

MR. LAXTON of Bedford, raiser of Noble, A. F. Barron, Pioneer, King of the Earlies, and other fine Strawberries, brings before our notice a new late variety, which bids fair to form a valuable addition to the ranks of this delicious fruit. It is stated to be a seedling from British Queen crossed with Helena Gloede, ripening from ten days to a

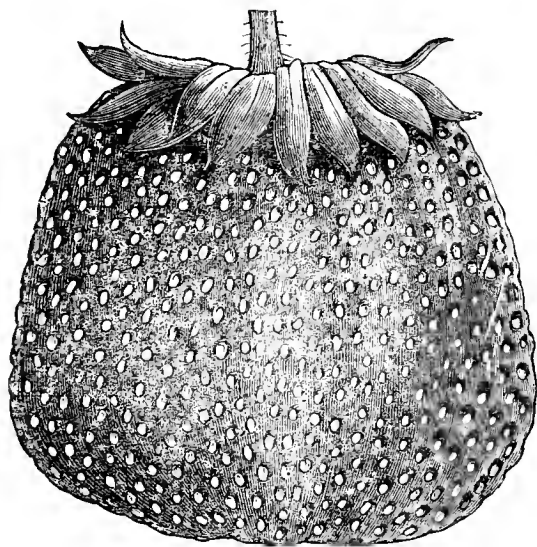


FIG. 3.—STRAWBERRY LATEST OF ALL.

fortnight after the former. The faults of British Queen are its tender constitution and uncertain bearing qualities; but Latest of All, while fully equal to its parent in flavour, is said to be much more hardy, to thrive in any soil where Strawberries succeed, and to be very prolific and continuous in bearing. The habit is described as "vigorous but dwarf, the foliage thick, leathery, and remarkably downy, rendering this variety able to resist the attacks of mildew to which many late sorts are liable." The specimen fruits received, one of which is represented by the engraving (fig. 3) are conical and sometimes corrugated fruits of extraordinary size. The colour is dark red next the sun, and paler in the shade; seeds small and prominent. The flesh is firm, white, juicy, and richly flavoured, with somewhat of the Pine or Hautbois flavour. We cannot say anything more commendatory of Latest of All than that it is a fitting and worthy companion to Noble.

NOTES ABOUT STOVE PLANTS.

SOME stove plants are frequently grown in too high a temperature during the summer months. Artificial heat only tends to make them grow quickly, and in consequence they do not possess the solidity that is necessary to insure satisfactory flowering. This is not the sole cause of failure; they are often overshadowed, an evil that cannot be too carefully avoided.

POINSETTIAS.

Unfortunately in most gardens cold frames are not provided in such quantity as are really necessary, though they are amongst the most useful of glass structures for many plants during the summer months. Where vegetable forcing is carried out on a large scale there is generally a good number at disposal at this

season of the year. Poinsettias that were rooted in May, and are now in 6-inch pots, will be much better in cold frames than in heated pits. Any plants that have not taken freely to the new soil may be left to come forward with the next supply. Before placing them in cold frames it is important that they be carefully prepared for the change by exposing them to more air and a lower night temperature. The frames should be closed early in the afternoon while the sun is upon them, which will assist in maintaining a suitable night temperature. When the plants show signs of vigorous growth the lights may be thrown off during the day, but for some time ventilation will not be necessary at night. Discontinue shading as early as possible, and then the plants will grow strongly and possess the solidity that is essential to the production of good heads. Cuttings may still be rooted in thumbs and then transferred into 4-inch pots, which will be large enough for all propagated during the next two or three weeks. Pot these plants moderately firm in good loam, sand, and one-seventh of manure, which assists in promoting firm growth. Leaf mould may be used in the cutting pots, but if employed in the compost afterwards it promotes a too rapid growth, resulting in the plants becoming tall and soft, consequently only producing small bracts.

STEPHANOTIS FLORIBUNDA.

Early plants that have produced a profusion of bloom will be better without artificial heat. In addition, the structure in which the plants are grown may be ventilated during the hottest part of the day as freely as a greenhouse. This will insure firm sturdy growth and well-ripened wood, that will be certain to yield abundance of bloom another year. Those who think that a close moist atmosphere is essential to keep this plant growing in order to obtain blooms will find that this end can be accomplished by the method of culture advised. Perhaps the flower trusses will not be produced quite so quickly, but it is certain that the plants are being prepared for flowering profusely another year.

If mealy bug infests the plant it invariably makes headway after the flower trusses appear, and cannot well be dislodged by a free use of the syringe. Under these conditions every attempt should be made to exterminate it out now. If the plants are grown in pots and their shoots trained to strings they may be taken down and the plants thoroughly washed with a solution of 1 oz. of petroleum to a gallon of water. If the plants cannot be removed the same application may be applied to them where they are, and repeated again in about three weeks. Some care is needed after syringing to protect the plants from the sun until the whole of the oil has evaporated. This will take three or four days. Do not overshadow them, or it will prove as injurious to the plants as if they were left exposed while the oil is upon the foliage. It must be kept in mind that the *Stephanotis* requires no shade from the sun except when applications of this nature are applied.

BEGONIAS.

Very frequently these are grown in a too high temperature, and consequently the beauty they would display in a suitable medium is destroyed by the plants running up tall. They are more suited for an intermediate structure than a warm stove, although they are useful in the latter during the winter and early spring months. Two of the most useful Begonias for the conservatory from January to the end of April are *B. manicata* and *B. hydrocotylifolia*. The latter is the better of the two, on account of its lasting properties. Its pink flowers and flower stems are very effective standing above other dwarf flowering plants. *B. manicata* is the earlier, and on this account is valuable. These are looked upon as stove Begonias, and are frequently grown for the embellishment of that structure. This is a mistake, for the flowers are soon over—in fact, they are scarcely worth growing for the stove alone.

Plants for next year are now in 3-inch pots in which they were inserted. The growing end of the plant roots so freely that all old plants are thrown away as soon as the requisite number of cuttings have been inserted. We invariably stand them in a late vinery. They are well rooted now, and growing freely. They should be placed in 5 and 6-inch pots in a compost of loam, sand, one-seventh of manure, and about one-third of leaf mould. They will be at home in cold frames until damp compels their removal to a drier position. They are safe until they come into flower in a temperature of 50°. A portion of the plants can be introduced into a temperature 10° higher to bring them into flower, but they need careful hardening afterwards, or their flowers fall when removed to a house where the temperature only ranges about 45° to 50°.

Such Begonias as *Ingrami*, *Knowsleyana*, *semperflorens rosea*, *earminea*, and others should now be transferred to 5-inch pots, and grown in cold frames. They need shading from the bright rays of the sun, and abundance of air during the day, after they display signs of rooting freely in the fresh compost.

Cuttings of all except *Knowsleyana* may still be inserted, as well as good supplies of *nitida* and its variety *rosea*. Sow seed of the old *semperflorens*. Cuttings of *Carrieri* may be inserted in quantity, even if they are only flowering shoots, which will lengthen, and be useful for furnishing purposes. If the cuttings of this have no eye at the base they must not be pinched after they are rooted, for they will fail to break again into growth. This is one of the most useful Begonias that can be grown, as it can be flowered either in summer or winter in the smallest pots, or can be grown into a good sized bush. Its habit of growth for this purpose is all that can be desired.—W. BARDNEY.



NATIONAL ROSE SOCIETY.

ANNUAL EXHIBITION AT THE CRYSTAL PALACE.

ROSES and Royalty are potent factors in awakening the enthusiasm of the general public, hence it need hardly be said that the Crystal Palace was largely attended on Saturday last, and were the crush of a holiday crowd the end and aim of the Society devoted to the interests of the Rose, then must their exhibition in this year of grace be classed as the most successful that they have ever held. Many species of the Rose being Persian plants, it was in accordance with the fitness of things that our visitor, the Shah, should be taken by his English hosts to see the rarest and most radiant of flowers, the brightest jewel in Flora's richly gemmed crown, as we grow it here in England. Possibly the gardeners of Teheran do not grow Roses as we grow them, for nowhere are they more cared for or more dearly cherished than in this country, but there may be some love for the queen of flowers in the Oriental breast for all that; therefore, let us hope that the dusky potentate enjoyed his visit, and gained instruction from it too.

Rarely, if ever, has a finer show been held than that of the National Society this year. Considering the trying weather, for hardly a drop of rain had fallen for several weeks, the exhibits as a whole were excellent, and prizewinners, who have triumphed over no ordinary difficulties, have ample reason for self-congratulation. To southern growers these remarks especially apply; many of them must, after the long spell of dry, hot weather, have awaited the show day with impatience. A magnificent stand was that of the famous Yorkshire exhibitors, Messrs. Harkness, in the chief class. In the amateurs' division the great features were the stands of Messrs. Grant and Lindsell. As to varieties, Ulrich Brunner, Mrs. J. Laing, Her Majesty, Lady Mary Fitzwilliam, Marie Baumann, Marquise de Castellane, Charles Darwin, and Madame Susanne Rodocanachi were in excellent condition amongst the H.P.'s, while such fine varieties as Madame Gabriel Luizet, Merveille de Lyon, Charles Lefebvre, Heinrich Schultheis, Boieldieu, and Violette Bouyer were less noteworthy. The queen of the Teas was undoubtedly Comtesse de Nadaillac; and Caroline Kuster, Souvenir de Paul Neyron, Niphetos, Francisca Kruger, Madame Cusin, and Souvenir d'Elise Vardon were also well represented.

As the public were admitted to the Show long before the work of reporting was half over, and quickly packed the tent to excess, a more difficult and unpleasant task than that of taking notes could not well be imagined. If a few errors have crept into the following report it is hoped that they will, under the circumstances, be pardoned. So fine a show was worth more attention than could possibly be given to it.

NURSERYMEN'S CLASSES.

Following the order of the schedule we first find five important classes devoted to nurserymen, divided into two divisions, exhibitors in the one not being allowed to compete in the other.

Class 1, seventy-two distinct, single trusses.—The six stands in this one class formed a display of great beauty and interest. There was not one in which some good blooms were not observable, and the leading boxes were, if anything, above the average. The first prize consisted of a valuable challenge trophy and £6, and it was won by Messrs. Harkness and Son, Bedale, Yorks, who have made rapid strides towards the front during the last few years, and on the present occasion exhibited a magnificent collection of flowers, fitted to compare with the best stands of former days. Their northern position placed them at an advantage with their southern rivals, as the hot, dry weather in the south has hurried on the blooms too rapidly, but this should detract little from the credit due to them. They showed large, substantial, well built up flowers, admirably finished, true, bright, and clear in colour, in fact in the perfection of show condition. The boxes were arranged in threes, with one as an apex and two as a base, and the varieties were:—Upper box, back row: Ulrich Brunner (a superb bloom), Mrs. J. Laing, Mrs. Jowitt (these were a splendid trio), Duchesse de Vallombrosa, Horace Vernet, Hippolyte Jamain (weak), Madame A. Lavallée, and Her Majesty (superb). Middle: Violette Bouyer, Lord Macaulay, Souvenir d'Elise (very beautiful), Rosieriste Jacobs, Amazone, Duke of Connaught, Marie Rady, and Louis Van Houtte. Front: La Duchesse de Morny

(beautiful), Madame G. Luizet, Charles Darwin, Niphetos (weak), Duc de Rohan (splendidly coloured), La France, Harrison Weir, and Merveille de Lyon. Lower left hand box, back row: Devienne Lamy (very fine), Lady M. Fitzwilliam (very large but coarse), François Michelin, Madame Montet, Comtesse d'Oxford, Madame Hippolyte Jamain, Etienne Levett, and Innocente Pirola. Middle: Captain Christy, A. K. Williams, Marie Verdier, John Stuart Mill (small but beautiful), Princess of Wales, Penelope Mayo, Silver Queen, and May Quennell. Front: La Fille de St. Denis, Royal Standard, Charles Lefebvre (very weak), Etoile de Lyon, Lady F. Cavendish (small but very fresh), La Boule d'Or, Dr. Sewell, and Heinrich Schultheis (very large). Lower right hand box, Back row: Benoit Comte (very fine), Marquise de Castellane, Bartolomeo Joubert (superb), Mons. Noman, Paul Neyron, Princess Beatrice, Mons. Alfred Dumesnil, and Queen of Queens. Middle: Pride of Waltham (good), Abel Carrière (weak), Souvenir d'un Ami (very good), Baronne Hausmann (beautiful), Comtesse de Nadaillac, Mons. E. Y. Teas, Boieldieu (poor), and Général Jacqueminot. Front: Maréchal Vaillant, Madame Eugène Verdier, Annie Wood (poor), Madame Angèle Jacquier, Reynolds Hole, The Bride, Countess of Rosebery, and Madame Hippolyte Jamain (very fine indeed). Generally speaking the H.P.'s were very strong, the Teas a little weaker. Last year's winner, Mr. Frank Cant, Colchester, had a beautifully fresh and well-finished lot of blooms, and it speaks most highly for the first prize collection that, fine and even as were the Colchester blooms, they were distinctly in the rear. For once the powerful southern exhibitor was decisively beaten. He showed Niphetos superbly, and Madame de Watteville was also beautiful. Amongst the H.P.'s Duke of Teck was in exquisite condition, though not large, and Her Majesty was grandly shown; Comtesse d'Oxford was large, but coarse; Alfred Dumesnil was very good. The Teas were the strongest feature of the boxes. They are not often seen so beautifully finished as are Mr. Frank Cant's flowers. Messrs. R. Mack & Son, Catterick, York, were placed third, and their collection was a highly creditable one, comprising many fine blooms; Marie Baumann, Lord Macaulay, Comte de Raimbaud, Ulrich Brunner (superb), A. K. Williams and others were very strong indeed. Had the Teas been of proportionate quality it is questionable if Messrs. Mack would not have been higher placed. Mr. B. R. Cant, Colchester, was fourth. Two others competed.

Class 2, forty-eight distinct, three trusses of each.—This class was well filled. Five competed, and the display was an imposing one. Messrs. Paul & Son, Old Nurseries, Cheshunt, were placed first for a fresh well balanced collection of blooms, the individual examples clear, smooth, and well finished. Their names were as follows:—Back boxes (two); back row: Madame Susanne Rodocanachi (very large and glowing in colour, a fine Rose finely shown), Madame A. Lavallée, La France, Beauty of Waltham, Star of Waltham, Marshall P. Wilder, Capt. Christy, and Comtesse d'Oxford. Front: Grandeur of Cheshunt, Catherine Mermet, Mons. E. Y. Teas, Madame de Watteville, Chas. Lefebvre, Innocente Pirola, Duke of Teck, and The Bride. Front boxes; back row: Merveille de Lyon (very fine indeed), Marie Baumann (splendid), Marie Verdier, Abel Carrière, Her Majesty, Maurice Bernardin, Duchesse de Morny, and Reynolds Hole. Front row: Chas. Darwin, Souvenir d'Elise, Etienne Levett, Queen of Queens, Xavier Olibo, Niphetos, A. K. Williams, and Madame Norman Néruda. Mr. Frank Cant followed closely, also with an even and excellent lot of flowers. Perhaps the best were Marie Cointet, Marie Van Houtte, Pride of Waltham, and Duke of Teck. Mr. B. R. Cant was third, and Messrs. Cranston fourth, one other competing. Many excellent examples were to be found in these stands, and would have been noted had circumstances permitted of their being singled out.

Class 3, forty-eight distinct, single trusses.—This and the two following classes were distinct from the preceding. Messrs. Cooling & Sons, Bath, won with an admirable and well-finished collection, only lacking some strong back row flowers to be well above the average. The varieties were:—Back row: Marshall P. Wilder, Madame Schubert, Gabriel de Peyronney, Abel Grand, Leopold I., Merveille de Lyon, Fisher Holmes (very good), Madame Eugène Verdier, Comtesse d'Oxford (very good), Her Majesty, Star of Waltham, Madame Hippolyte Jamain, Alfred Colomb (very rich), François Michelin, Madame G. Luizet, and Madame Marie Verdier. Middle row: Lælia, Prof. Sewell, Mrs. Laing, Black Prince (very good), Pride of Waltham, Comte de Flandres, Baronne de Rothschild, Marie Rady, The Bride (exquisite), Pierre Notting, La Duchesse de Morny (very fine), St. George, Souvenir d'Elise Vardon, A. K. Williams, Magna Charta, and Le Havre. Front row: Louis Corbet (very bright), Duchess of Leeds, Ella Gordon, La France, Le Havre (shown twice), Madame Caillat, Reynolds Hole, Silver Queen, Baronne Hausmann, Souvenir de M. Paul Neyron, Madame de Wolfs, Ulrich Brunner, Souvenir de Spa, Catherine Mermet, Dr. Andry, and Captain Christy. Messrs. Keynes, Williams & Co. had a capital stand, which had been placed in another portion of the Show, and was not at first discoverable. They secured second prize with something to spare, the remaining awards going to Messrs. G. & W. H. Burch, Peterborough, and J. Jefferies & Son, Cirencester. There were several other competitors.

Class 4, twenty-four distinct, single trusses.—A charming box from Mr. G. Prince, 14, Market Street, Oxford, secured first place with twenty-four singles. The varieties were all stated to have been grown on the seedling Briar, and were as follows:—Back row: Marie Baumann, Her Majesty, Reynolds Hole, Niphetos, Madame Victor Verdier, Comtesse de Nadaillac, A. K. Williams, and Queen of Queens. Middle row: Merveille de Lyon, Horace Vernet, Jean Ducher, Earl of Dufferin, Madame G. Luizet, Marie Rady (very beautiful), Catherine Mermet

and Charles Darwin. Front row: Duchess of Bedford, Madame de Watteville, Baronne Hausmann, Alba Rosea, Exposition de Brie, Lady Mary Fitzwilliam, Xavier Olibo, and Duke of Teck. These were not phenomenal blooms, but of good and even quality. Mr. J. Walker of Thame, famed for Narcissi, also showed well, and was placed second; the remaining prizes falling to Messrs. Mattock, Oxford, and G. Bunyard and Co., Maidstone.

Class 5, twenty-four distinct, three trusses of each.—Messrs. G. and W. H. Burch here improved materially on their previous position with twenty-four trebles, winning well; they showed Maurice Bernardin, Captain Christy, Alfred Colomb, Merveille de Lyon, Ulrich Brunner, Her Majesty, Countess of Oxford, Queen of Queens, Duc de Rohan, Madame Willermoz, Star of Waltham, and Catherine Mermet. Front row: Madame Cusin, Camille Bernardin, Madame de Watteville, Marie Rady, Souvenir d'Elise Vardon, A. K. Williams, Innocente Pirola, Horace Vernet, La France, Xavier Olibo, The Bride, and Marie Baumann. These were an excellent lot, and richly deserved the award. Messrs. Keynes, Williams & Co. were second; Messrs. Jefferies, Cirencester, third; and Messrs. Cooling fourth.

AMATEURS.

The exhibits in this section formed a splendid display. Messrs. Grant and Lindsell were in magnificent form, and it is to be deeply regretted that a complete and critical reference to their stands was prevented by the crush of people around the boxes. We succeeded in snatching the names of the varieties, but to do justice to such excellent collections as these a close and careful inspection was absolutely necessary.

Class 6, forty-eight distinct, single trusses.—This was the most important of the amateurs' classes, the first prize being the valuable champion challenge trophy and £6. This class is invariably a highly interesting one, and on the present occasion two former winners in Mr. W. J. Grant, Hope End, Ledbury, and the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, were in competition, as well as other well known exhibitors. The contest lay between the two named, but the issue was decided without difficulty, Mr. Grant winning by many points with a superb collection, in which it would have been difficult to detect a weak spot. The flowers throughout were substantial, rich in colour, and refined—such, in fact, as Rose growers love to linger over, but from which they were literally dragged away on the present occasion by a living stream. The varieties were Comtesse d'Oxford, Madame Victor Verdier, Niphetos, Le Havre, Duchesse de Vallombrosa, Duke of Edinburgh, Ulrich Brunner, Madame Lavallée, Marie Cointet, Marie Rady, Madame Gabriel Luizet, Duke of Wellington (superb), Madame Rodocanachi, Xavier Olibo, Caroline Kuster, Prince Arthur, Capt. Christy, Comte de Raimbaud, La France (so named, but apparently Capt. Christy), Alfred Colomb (superb), François Michelin, Louis Van Houtte, Madame E. Verdier, A. K. Williams, Her Majesty, Marie Baumann (a magnificent bloom), Etienne Levett, La Rosière, Anna Olivier, Horace Vernet, Madame H. Jamain, Dr. Andry, La Duchesse de Morny, Earl of Dufferin, Pride of Waltham, Dingee Conard, Star of Waltham, Jean Soupert, Madame Crapelet, Pierre Notting, Merveille de Lyon, Chas. Darwin, Mrs. J. Laing, Beauty of Waltham, Heinrich Schultheis, Dupuy Jamain, Camille Bernardin, and Reynolds Hole. The Rev. J. H. Pemberton had a very handsome and even stand, little, if any, below his best form, the flowers neat and good. He easily secured second prize, the third going to Mr. S. P. Budd, Bath; and the fourth to Mr. J. H. Pitt, Maidstone.

Class 7, twenty-four distinct, three trusses of each.—Mr. Grant was again victorious here. He had a beautiful stand of triplets, the varieties being Marie Baumann, Madame Rodocanachi, Marie Finger, Mons. Boncenne, Louis Van Houtte, Pride of Waltham, Chas. Darwin, Her Majesty, Ulrich Brunner, Marie Verdier, Merveille de Lyon, Le Havre, Marie Rady, Duchesse de Vallombrosa, La France, Camille Bernardin, Earl of Dufferin, Madame G. Luizet, Capt. Christy, Dr. Andry, La Rosière, Alfred Colomb, Dupuy Jamain, and Comtesse d'Oxford. Mr. S. P. Budd was second, but there were no other competitors.

Class 8, thirty-six distinct, single trusses.—This produced in the first prize lot of Mr. E. B. Lindsell, Hitchin, one of the most beautiful collections of Roses ever seen at the National Show. Perpetuals and Teas were alike magnificent, and collectively formed a stand with which the other competitors were quite unable to cope with any hope of success. The blooms were large and substantial, yet shapely and refined, with rich lustrous colour and admirable finish. The varieties were:—Back row: Marie Rady, Her Majesty, Xavier Olibo, Niphetos, Dr. Andry, Marie Baumann, La France, Fisher Holmes, Madame G. Luizet, A. K. Williams, Merveille de Lyon, and Ulrich Brunner. Middle row: Emilie Hausburg, Marie Verdier, Beauty of Waltham, Capt. Christy, Madame Victor Verdier, Violette Bouyer, Louis Van Houtte, Comtesse de Nadaillac, Caroline Kuster, Catherine Mermet, Duchess of Bedford, and Francisca Kruger. Front: Duchesse de Caylus, Jean Ducher, Mons. Noman, Victor Hugo, Viscountess Folkestone, Camille Bernardin, Innocente Pirola, Madame de Watteville, Prince Arthur, Princess of Wales, Madame Cusin, and La Boule d'Or. Mr. J. Brown, gardener to Mrs. Waterlow, Reigate, was an excellent second; and Mr. E. West, Reigate, third.

Class 9, eighteen distinct, three trusses of each.—Mr. Lindsell was again victorious here. Had he entered in the champion class Mr. Grant would have had a foeman well worthy of his steel. His triplets were Xavier Olibo, Her Majesty, A. K. Williams, Comtesse de Nadaillac, Horace Vernet, Jean Ducher, Merveille de Lyon, Marie Rady, Marie Baumann, Niphetos, Caroline Kuster, Louis Van Houtte, Ulrich Brunner,

Mons. E.Y. Teas, La France, Catherine Mermct, and Madame Victor Verdier—a grand lot of blooms.

Class 10, twenty-four distinct, single trusses.—Mr. G. Christy, Westham, took premier honours here with Dr. Andry, Charles Lefebvre, Mons. Noman, Camille Bernardin, Marie Rady (very fine), Louis Van Houtte, Merveille de Lyon, Princess Beatrice, Marie Baumann, L'Eclair, Beauty of Waltham, Marie Finger, Jean Souper, Fisher Holmes, Madame Luizet, Duke of Wellington, La France, Ulrich Brunner, Countess of Rosebery, Madame C. Wood, Alba Rosea, A. K. Williams, Capt. Christy, and Duke of Teck. The Rev. A. Foster Melliar, Ipswich, was second; Mr. P. B. Haywood, Reigate, third; and Mr. Gurney Fowler, Woodford, fourth.

Class 11, twelve distinct, three trusses of each.—Triplets were here but moderately shown, the best being those from Mr. G. Christy, who had Comtesse de Serenyc, Madame Gabriel Luizet (fresh and good), Marie Rady, La France, Marie Baumann, and Merveille de Lyon in his back row, and Dr. Andry (small, but richly coloured), Innocente Pirola (very good), Mons. Noman, Duke of Wellington, Captain Christy, and L'Eclair in the front. The Rev. A. Foster Melliar followed, but his blooms were small, and some faded. The Rev. W. H. Jackson, Slaysden, Beds, was third; and Mr. A. Evans, Oxford, fourth.

Classes 12 to 16.—These were for eighteen, twelve, nine, and six blooms respectively, with one of six trebles. In the first the Rev. L. Garnett, Christleton Rectory, Chester, won with Beauty of Waltham, Charles Lefebvre, Star of Waltham, Mrs. John Laing, Dupuy Jamain, Horace Vernet, Come de Rainbaud, Her Majesty, Lord Bacon, Madame A. Lavallée, Prince Arthur, Comtesse d'Oxford, Comtesse de Camondo, Comte E. Labryère, Marie Verdier, Xavier Olibo, Alfred Colomb, and Mrs. Laxton. This was a fresh and delightful stand, with well finished blooms. Mr. Edward Mawley, Rose Bank, Berkhamstead, was second, Marie Baumann being his best bloom. Mr. J. E. Backhouse, Henworth Grange, Darlington, was a close third, and Miss F. Baker, The Hollies, Reigate, fourth. Lieut.-Col. Standish Hore, St. Asaph, was first with twelve, a bright, well-finished lot, comprising Marie Finger, Louis Van Houtte, Marie Verdier, Beauty of Waltham, Etienne Levet, Belle Lyonnaise, Le Havre, Charles Darwin, Xavier Olibo, A. K. Williams, Hon. Edith Gifford, and Alfred Colomb. Mr. O. G. Orpen was a very good second, Messrs. Whittle and R. L. Knight both showing well for the remaining prizes. Mrs. G. L. Times, Hitchin, won with nine blooms, staging François Michelin, Alfred Colomb, Captain Christy, Star of Waltham, Her Majesty, Emilie Hausburg, Pierre Notting, Xavier Olibo, and Madame Laeharme, in good form. Second, the Rev. J. S. Taylor, Evesham; third, Mr. H. V. Edwards, Derby; fourth, Mr. G. Moules, Hitchin. Mr. Edward Horne, Park House, Reigate, had François Michelin, La France, Pierre Notting, Duke of Teck, Marie Baumann, and La Duchesse de Morny in fair condition in the class for six, and won. Mr. C. Knifton, Duffield, second; Mrs. Ponsford, Reigate, third; and Mr. J. Rawlins, Cirencester, fourth. Mr. J. Mallender, gardener to Miss Mellish, Hodsock Priory, Worksop, won with six trebles, showing La France, A. K. Williams, Violette Bouyer, Alfred Colomb, Marie Finger, and Louis Van Houtte. Mr. Narrowway, Oxford, was second; Mr. W. Boyes, Derby, third; and Mr. P. G. C. Burnard, Reigate, fourth.

Seventeen to twenty inclusive were extra classes, the first being for amateurs who had never won a prize at an exhibition of the National Rose Society. Six blooms only were asked for, and Mr. M. Whittle, Leicester, won with François Michelin, Louis Van Houtte, Her Majesty, La France, Capt. Christy, and Marie Rady, Messrs. C. J. Grahame, S. Marten, and Miss E. B. Denton following. For six blooms grown within eight miles of Charing Cross, Mr. J. Bateman, 72, Twisden Road, N.W., followed up previous victories by easily securing first place. He had Etienne Levet, François Michelin, Ulrich Brunner, Baronne de Rothschild, Merveille de Lyon, and Marquise de Castellane in capital condition. Mr. Frederici, Muswell Hill, was second, Mr. Northover, Wimbledon, third, and Mr. W. B. Faulkner, Wimbledon, fourth. The Rev. J. H. Pemberton won with six new Roses, showing Earl Dufferin, Her Majesty (in beautiful condition), Viscountess Folkestone, Lady Helen Stewart, Sir Rowland Hill, and Ethel Brownlow. Mr. T. W. Girdestone was second, and the Rev. A. Foster Melliar third. With six single trusses of any Hybrid Perpetual the Rev. J. H. Pemberton won, showing a neat lot of Earl of Dufferin. Second, Mr. G. Christy, with Marie Baumann. Third, Mr. E. Horne, with La France. Fourth, Mr. W. G. Grant, name undiscoverable.

TEAS AND NOISETTES—NURSERYMEN.

Teas and Noisettes were a rich and beautiful display. Considered collectively they were well up to the average, the flowers being large, substantial, well formed, fresh and clear. That they were greatly admired goes without saying, but unhappily there was no possibility of more than a cursory inspection.

Class 21, twenty-four blooms, distinct.—Mr. G. Prince's blooms were in the best condition, and he scored a ready victory, which must have proved highly gratifying to him, considering the powerful opposition. His back row flowers were Comtesse de Nadaillac, Niphetos (magnificent), Catherine Mermct, The Bride, Souvenir d'un Ami, Hon. Edith Gifford, David Pradel, and Jean Ducher. Middle row: Marie Van Houtte, François Kruger, Comtesse Panisse, Princess of Wales, Innocente Pirola, Souvenir de Thérèse Levet, Etoile de Lyon, and Alba Rosea. Front row: Madame Cusin, La Princesse Vera, Madame de Watteville, Souvenir d'Elise, Madame Lambard, Madame Hippolyte Jamain, Madame Jacquier, and Mdlle. Marie Arnaud. Mr. Frank Cant was a good second. He is usually very strong with Teas, but some of his blooms were a little past. Mr. B. R. Cant was third.

Class 22, eighteen distinct.—Here Messrs. J. Burrell & Co., Cambridge, were most successful with a delightful stand. The varieties were:—Back row: Caroline Kuster, Madame Cusin, The Bride, Madame de Watteville, Princess of Wales, and David Pradel. Middle: Comtesse de Nadaillac, Niphetos, Madame Jacquier, Innocente Pirola, and Adam. Front: Amazone, Catherine Mermct, La Boule d'Or, Souvenir d'un Ami, Luciole, and Marie Van Houtte. Messrs. Jefferies were second, Mr. Mattock third, and Messrs. Bunyard fourth, all with beautiful stands; indeed, this was a highly interesting and attractive class.

Class 23, twelve trusses of any Tea or Noisette, Maréchal Niel excepted.—How fine the beautiful Comtesse de Nadaillac is this year will have been gathered from the frequency with which it has been named in previous classes, and in the present case it composed three out of the four prize stands. Mr. Prince was first with a grand lot, Mr. Frank Cant being second, and Mr. Mattock fourth, the third prize going to Mr. B. R. Cant for Madame de Watteville.

Class 24, eighteen distinct, three trusses of each.—Teas in triplets were beautifully shown by Mr. Frank Cant. The varieties were Ethel Brownlow, Niphetos, Madame de Watteville, Comtesse de Nadaillac (splendid blooms), Etoile de Lyon, Souvenir d'un Ami, Hon. Edith Gifford, Marie Van Houtte, Innocente Pirola, Catherine Mermct, Madame Cusin (magnificent), Souvenir d'Elise Vardon, Madame Lambard, Princess of Wales, The Bride, La Boule d'Or, Madame Jacquier, and Francisca Kruger. These formed one of the most charming stands in the Show. Mr. G. Prince, showing Niphetos, Comtesse de Nadaillac, Madame Cusin, Souvenir d'un Ami, and Souvenir d'Elise Vardon superbly, was a very close second, and Mr. B. R. Cant third.

TEAS AND NOISETTES—AMATEURS.

Classes 25 to 30, for eighteen, twelve, nine, and six blooms, twelve trebles, and six single trusses of any Tea or Noisette respectively formed a beautiful and greatly admired section. The flowers were finely shown throughout. Mr. Grant won the silver cup and money prize offered for eighteen blooms with a delightful stand, composed of Comtesse de Nadaillac, Innocente Pirola, Francisca Kruger, Caroline Kuster, Souvenir d'un Ami, Marie Van Houtte, Souvenir de Thérèse Levet, Madame Bravy, Jean Ducher, Souvenir de Paul Neyron, Madame Lambard, Niphetos, Madame Cusin, Anna Ollivier, Madame Margottin, Souvenir d'Elise, Catherine Mermct, and the Hon. Edith Gifford. These were large, fresh, and well formed flowers, proportionate in quality to the H.P.'s so finely shown by the same exhibitor in other classes. The Rev. F. R. Burnside was a very good second with fresh and well finished flowers; the Rev. Hugh Berners a close third, and the Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, fourth. In the wars of the Roses we have still a church militant, and its representatives here fought well. A superb stand of twelve came from Mr. Lindsell, and won easily. The varieties were Niphetos (enormous in size, but somewhat coarse), Madame Cusin, Jean Ducher, Comtesse de Nadaillac, La Boule d'Or, Souvenir d'Elise Vardon, Catherine Mermct, Rubens, Madame de Watteville, Caroline Kuster, Innocente Pirola, and Princess of Wales. The points of such flowers as those of Mr. Lindsell and Mr. Grant it would have been a pleasure to study. Mr. O. G. Orpen, Colechester, was second, also with a beautiful stand; the Rev. J. H. Pemberton, third; and Mr. E. M. Bethune, Horsham, fourth. The Rev. L. Garnett won with nines, really beautiful examples of Comtesse de Nadaillac, the Hon. Edith Gifford, Caroline Kuster, Madame Bravy, Francisca Kruger, Madame Cusin, Innocente Pirola, Perle des Jardins, and Comtesse Panisse; Miss F. Baker was second; Mr. W. Narrowway, third; and Mr. R. G. Tucker, Farningham, fourth. Lt.-Colonel Standish Gore had the Hon. Edith Gifford, Madame Cusin, Princess of Wales, Comtesse de Nadaillac, Caroline Kuster and The Bride excellent in form in the class for six; the Rev. F. S. Taylor, Mr. E. Mawley, and Mr. G. Moules following. With triplets Mr. Grant once more demonstrated his superiority. His stand, which comprised Souvenir d'un Ami, Francisca Kruger, Souvenir de Paul Neyron, Madame Cusin, Jean Ducher, Innocente Pirola, Souvenir de Thérèse Levet, Catherine Mermct, Anna Ollivier, Comtesse de Nadaillac, and Niphetos, with one unnamed, was an admirable display of substantial, neat, and well finished flowers. The Rev. J. H. Pemberton was second, the Rev. F. R. Burnside third, and Mr. J. Brown fourth. Comtesse de Nadaillac was again shown in three out of the four stands in the last class for Teas, any variety. The Rev. F. R. Burnside scored his first win with a very neat box of it. Mr. Lindsell was very little way behind, also with the Comtesse. The Rev. L. Garnett was third with Madame Cusin, and the Rev. A. Foster Melliar fourth with Comtesse de Nadaillac. Class 31, for a basket, vase, or épergne of Teas or Noisettes, to be arranged with Rose foliage, brought only two competitors. Mrs. Edward Mawley won with a beautiful basket of flowers, Miss Agnes Bloxam taking second prize. This class appeared to have been left by common consent to the ladies, who certainly ought to have an opportunity afforded them, but we should have liked to see more competition.

OPEN CLASSES.

These chiefly consisted of stands of one variety, and in all cases twelve single trusses were asked for.

Class 32, any yellow except Maréchal Niel.—The prize stands here were all excellent. Mr. Grant, showing Caroline Kuster finely, occupied his usual position of first. Mr. Frank Cant followed with Comtesse de Nadaillac, this variety also securing third prize for Mr. Prince, and fourth for Mr. B. R. Cant.

Class 33, any white except Niphetos.—At last Merveille de Lyon was

shown in something like representative condition. Messrs. Harkness won with some very fine blooms of it. The prize list showed no award of second, but gave Mr. B. R. Cant, who had Niphetos in fine condition, third; and Mr. Frank Cant (The Bride) fourth.

Class 34, any crimson except Marie Baumann or A. K. Williams.—Alfred Colomb, which was not very strong in the majority of the stands, was well shown in this class. It was very fine indeed in Messrs. Cooling's first prize stand; and fresh and good, albeit small, in Messrs. Cranston's second prize box. Messrs. Harkness were placed third with Ulrich Brunner, excellent blooms; and Mr. J. Walker third with fair examples of Reynolds Hole.

Class 35, any dark velvety crimson.—Prince Camille de Rohan was given as an example of the colour required in the schedule, but it was not represented in the prize stands. Messrs. Paul & Son, Cheshunt, won with Reynolds Hole; Messrs. Keynes, Williams & Co. were second with the same variety; Mr. Grant third with Abel Carrière; and Mr. R. B. Cant fourth, also with Reynolds Hole.

Class 36, for Maréchal Niel, did not fill.

Class 37, Marie Baumann.—Mr. G. Mount, Canterbury, had a grand box of this noble Rose, and achieved a meritorious victory. He was followed in the order of their names by Messrs. Paul of Cheshunt, Bunyard, and Cranston, all of whom had good stands.

Class 38, Lady Mary Fitzwilliam.—A splendid stand of this variety came from Messrs. J. Cocker & Sons, Aberdeen. It represented one of the most beautiful of Roses in a condition approaching perfection. There was no more attractive stand than this in the whole section. Mr. B. R. Cant was second, and Mr. Frank Cant third.

Class 39, A. K. Williams.—Messrs. Paul of Cheshunt and B. R. Cant were the only contestants. The former won with a stand of very richly coloured flowers.

Class 40, Niphetos.—There was more competition in this than in any other class, and the boxes formed a very beautiful display. Mr. Frank Cant's stand was a magnificent one, the flowers being of exquisite form and purity. He was an easy first, the second prize going to Mr. Prince, and the third to Messrs. Paul, Cheshunt.

Class 41, Her Majesty.—The coarseness frequently observable in this variety was entirely absent from the first prize blooms of Messrs. Paul, Cheshunt. They were, perhaps, one of the best stands of this variety ever shown, being noteworthy for perfection of globular form, clearness of colour, and refined substance rather than mere size. Mr. Grant was second, and Mr. Frank Cant third.

Class 42, any Rose not previously mentioned.—This produced three splendid boxes. An exquisite stand of Madame de Watteville, admirably finished and delicately beautiful, secured the first prize for Mr. Frank Cant. A noble box of Ulrich Brunner, Mr. Grant's contribution, was placed second; and Comtesse de Nadaillac, well shown by Mr. Prince, was placed third.

Class 43, any new Rose except Her Majesty.—Messrs. Cocker & Sons were placed first with a splendid box of the beautiful new Rose Lady Alice, which, as shown, was generally admired. The blooms are admirable in form and substance, while the colour is a most pleasing soft blush shade, resembling that of Lady Mary Fitzwilliam. Mr. B. R. Cant was second with The Bride; and Messrs. Paul of Cheshunt third with Queen of Autumn, a crimson H.P. of good form and colour.

Class 44, twelve new Roses.—Mr. F. Cant won with the following—Vi-countess Folkestone, Mons. Mat. Baron, Her Majesty, Earl of Dufferin, Sir Rowland Hill, Duchess of Leeds, Grand Mogul, Silver Queen, Miss Ethel Brownlow, Primrose Dame, Mrs. J. Laing, and The Bride. Messrs. Paul of Cheshunt were second, and Mr. B. R. Cant third.

Class 45, three trusses of any new Rose, with a ground plant.—This class was provided for Roses either not yet in commerce or not distributed before November, 1888. The prize was a gold medal, and it was won by Mr. Prince with his beautiful white Tea Souvenir de S. A. Prince, which has been previously described.

Class 46, garden Roses.—These formed an interesting display, though small, only two competing. H.P.'s were totally excluded, also exhibition Teas and Noisettes, so classed in the National Society's catalogue. Messrs. Paul, Cheshunt, won. It was difficult to get the names of their flowers, as they were half hidden in the stands, which in turn were surrounded by a dense throng; but such beautiful liliputians as Mignonette, Anemonæflora, and Gloire de Bordeaux, with Madame G. Bruant, Mercedes, and Coupe d'Hébé, were noticeable. Messrs. Cranston were a close second.

Class 47, twelve Moss and Provence Roses.—These, arranged in bunches, were very beautiful. Mr. Prince was first with Banche Moreau, Cristata, Eugénie Guinoiseau, Old Moss, Centifolia, Lanei, Mousseline, White Bath, Madame Moreau, and Salet. Messrs. Paul and Son, Cheshunt, were second, and Mr. House, Peterborough, third.

Class 48, Buttonhole Roses.—These were also a delightful display. Mr. J. Mattock won with a charming stand of Comtesse de Nadaillac, Niphetos, Madame de Watteville, Souvenir de Paul Neyron, W. A. Richardson, Innocente Pirola, Marie Van Houtte, W. F. Bennett, Homère, Rubens, Ma Capucine, and Anna Ollivier. Messrs. Bunyard were second with a very beautiful lot, Messrs. Cooling third, and Mr. J. House fourth.

THE CHAMPION ROSES.

The Society's silver medal for the best Roses in the Show, individual blooms, were awarded as follows:—Best H.P., nurserymen's class, Ulrich Brunner, a magnificent flower, shown by Messrs. R. Mack & Son;

amateurs' classes, Marie Baumann, a superb bloom, shown by Mr. W. J. Grant. It was not quite clear on the stand whether the latter bloom was intended for the honour or one of its neighbours, and the official list omits mention of this, but not of the others; it is therefore named under reservation. The best Teas were both Comtesse de Nadaillac, the winner in the trade section being Mr. Prince, and in the amateurs' Mr. E. B. Lindsell.

SUTTON, SURREY.—JULY 2ND.

CONSIDERING the very trying weather for Roses which we have experienced during the past three weeks, it was a matter of surprise to all rosarians who visited this Show that so many excellent blooms were staged, and that so good a Show had been got together, more especially as some exhibitors were absent, evidently reserving themselves for the Show at Croydon held on the following day, where large prizes were offered and a challenge cup of considerable value was to be fought for; while many exhibitors who would doubtless have put in an appearance were prevented from doing so by the simple fact that their Roses were past and gone for the present, and 1889 will ever be remembered for the disappointments which so many have experienced. Another circumstance which militated against the quantity shown at Sutton by the growers for sale was the Rose Conference held at Chiswick on the same day. Considering, therefore, surrounding circumstances, and remembering that Sutton is an early place, there was, as I have said, a number of very beautiful Roses shown.

Taking the large class for growers for sale first, Mr. Frank Cant of Colchester exhibited both in the class for thirty-six and Teas some marvellously fine blooms, most exquisite in form and colouring, staged with great taste and judgment. His stand of thirty-six included the following flowers:—Her Majesty, a very fine bloom; Victor Hugo, Mdle. Marie Finger, Alfred Colomb, François Michéon, E. Y. Teas, Souvenir d'Elise, Pride of Waltham, very fine; Niphetos, a grand bloom, Star of Waltham, Countess of Pembroke, Madame Alphonse Lavallée, a very beautiful flower not often seen; Innocente Pirola, a grand bloom; Madame Lambard, L'Eclair, very bright and beautiful; Madame Victor Verdier, Jean Liabaud, Ulrich Brunner, Lady Mary Fitzwilliam, which has been very fine this season; Duke of Connaught, The Bride, very lovely; Sultan of Zanzibar, Comtesse de Nadaillac, lovely; Horace Vernet, Mdle. Marie Cointet, Madame de Watteville, Rosieriste Jacobs, a grand flower; Madame Cusin, Duke of Teck, Moiré, a fine bloom of a good old Tea; Prince Arthur, Francisca Kruger, A. K. Williams, Catherine Mermet, Earl of Dufferin, very fine; Miss Ethel Brownlow, a very beautiful Tea, approaching in colour Comtesse de Nadaillac, but distinct and good, and Harrison Weir. Mr. B. R. Cant was second with an excellent box, and Messrs. Burch third. In twelve Teas Mr. Frank Cant was again first with a most lovely box, consisting of Madame de Watteville, Innocente Pirola, Madame Cusin, a most marvellous bloom; Souvenir d'Elise, a Boule d'Or, Jean Ducher, Miss Ethel Brownlow, Francisca Kruger, Marie Van Houtte. This was a perfect stand of lovely flowers; Mr. B. R. Cant was second, and Messrs. Keynes, Williams & Co. third.

In the class for twenty-four distinct blooms (amateurs), Mr. E. B. Lindsell was first with a box of splendid flowers, consisting of Marie Rady, Charles Lefebvre, Gabriel Luizet, Xavier Olibo, La France, Duke of Connaught, Lady Mary Fitzwilliam, Horace Vernet, Duke of Wellington, Anna Ollivier, Beauty of Waltham, Captain Christy, Ulrich Brunner, Merveille de Lyon, Victor Hugo, Duchess of Vallambrosa, François Michéon, Thomas Mills, Abel Carrière, Marie Baumann, La Boule d'Or, Camille Bernardin, Caroline Kuster, and Lou's Van Houtte. Mr. J. G. Tinker was a good second, and Mr. F. M. Bethune third. In the class for twelve the Rev. F. R. Burnside of Much Birch Vicarage, Hereford, was first with, among others, good blooms of Merveille de Lyon, Ulrich Brunner, Madame Gabriel Luizet, Marguerite de St. Amand, A. K. Williams, Grace Darling, Catherine Mermet, Marie Van Houtte, and Comtesse de Nadaillac. Mr. F. C. Pawle of Reigate was second, the Rev. W. H. Jackson third. In the class for eight trebles Mr. E. B. Lindsell was again first with Merveille de Lyon, Marie Baumann, Niphetos, Marie Rady, Louis Van Houtte, Camille Bernardin, and Caroline Kuster. Mr. R. E. West was second, and Mr. F. C. Pawle third. In the class for twelve Teas Mr. E. B. Lindsell was again first with Innocente Pirola, Madame Cusin, a splendid bloom; Souvenir d'Elise, Comtesse de Nadaillac, Princess of Wales, Caroline Kuster, Etoile de Lyon, Madame Lambard, Princess Beatrice, and Catherine Mermet. The Rev. F. R. Burnside was second with Comtesse de Nadaillac, Innocente Pirola, Madame Cusin, Etoile de Lyon, Hon. Edith Gifford, Jules Finger, Madame de Watteville, The Bride, Jean Ducher, Francisca Kruger, La Princess Vera; the Rev. W. H. Jackson was third. In Class 5, for nine distinct, the Rev. Alan Cheales was first with Star of Waltham, Captain Christy, Alfred Colomb, Gabriel Luizet, Beauty of Waltham, Her Majesty, Dr. Andry, Jean Ducher, and Lady Mary Fitzwilliam; Mr. C. E. Cuthell was second, and Mr. Percy Burnand of Reigate third. In the class for six Mr. Percy Burnand was first with Her Majesty, Countess of Pembroke, Marie Baumann, Queen of Queens, a good bloom of a very meritorious flower; Mrs. John Laing, and Xavier Olibo; Mr. Ernest Wilkins was second, and the Rev. Alan Cheales third. In Class 7, for four trebles, the Rev. Alan Cheales was first with Pride of Waltham, Madame Gabriel Luizet, Marie Baumann, and Beauty of Waltham; Mr. C. E. Cuthell was second. In the class for six Teas and Noisettes the Rev. Alan Cheales was first with Maréchal Niel, Madame Willermoz, Madame Caroline Kuster, Catherine Mermet, Comtesse de Nadaillac, and Marie Van Houtte; Mr. C. E. Cuthell was second,

and Mr. Percy Burnand third. In Class 9, for six of any one, the Rev. F. R. Burnside was first with Madame Cusin; Mr. E. G. Fowler second, and Mr. Cuthell third. In the local class for six blooms Mr. F. Hughes was first—Marie Verdier, Ulrich Brunner, La France, Star of Waltham, Marie Finger, François Michelon, Captain Christy, and Camille Bernardin; Mr. Molle was second. In Class 12, for three dissimilar, Mr. F. Delane was first with Marie Finger, Camille Bernardin, and Captain Christy for three Teas; and J. Malcolm was first with Madame Lambard, Francisca Kruger, and Catherine Mermet; Mr. Heiron was second. Class for six of one sort, Mr. Malcolm was first with La France; Miss F. Hughes second. The ladies' challenge cup for six distinct was awarded to Mr. H. J. Malcomb for Marie Baumann, Lady M. Fitzwilliam, Baroness Rothschild, François Michelon, Gabriel Luizet, and Louis Van Houtte, all good; Mr. Miller was second.

As is usual at Sutton, there was a large display of decorations, and, as is usual there, considerable taste was shown in arranging them. Some of the tables were good, but in some the principle of cramming a lot of flowers without any artistic design was to be seen, which is not only contrary to good taste, but to the fashion of the present day. Some of the baskets of Roses with Maidenhair foliage were very beautiful. All these were shown in a separate room, and very tastefully displayed.

I need hardly say to any who know Sutton that the arrangements were excellent. An indefatigable Secretary like Mr. Ernest Wilkins, seconded by a thoroughly good working Committee, caused all to run smoothly, and my only regret was that being due at the Rose Conference I could not remain to greet many friends, and to enjoy, as I always do, a Show so admirably arranged and so well carried out.—D., Deal.

MAIDSTONE.—JULY 3RD.

A "NEW departure" was made by this old-established Society, by holding their Exhibition in a tent in the Palace grounds instead of in a room, having a band and keeping the room open until nine o'clock, and I believe that the result justified the step; but it is strange in a town where there used to be held at one time a large and successful exhibition of flowers that there is so much apathy amongst the inhabitants. Comparatively few of them visit the Show, and although the neighbourhood is a good one for growing Roses, with the exception of Colonel Pitt, who has taken up the position held for so many years by the recently lamented Mr. John Hollingworth, there is hardly a local exhibitor. The Club has a most earnest and indefatigable Secretary in Mr. Herbert Bensted, who concentrates in himself the duties that generally fall to a committee, and he knows the Rose as well as anyone with whom I am acquainted, and so manages to make all go smoothly and well, so that no excuse on that head can be made; yet withal, the Show is not supported as it ought to be. No wonder that he feels disheartened about it, and feels inclined to let the Society drop. This year the same reasons which have somewhat militated against other shows interfered with it. We missed many exhibitors whose Roses have been usually seen here. Other shows interfered. It was the second day of the Rose Conference, although, from what I saw on the first day, I hardly imagine that many were kept away by it. The earliness of the season again militated against it, for Maidstone is an early locality, and their Show was fully a week too late, while the Croydon Show, where large prizes were offered, doubtless kept more away than the Rose Conference did. Yet a very good Show was held, and some very fine blooms of Hybrid Perpetuals were shown, the Teas being a failure. When such growers as Mrs. F. Warde, who is changing her residence. Mr. Wakley, the Rev. H. B. Biron, and Mrs. Fuller were absent, it may readily be imagined that the quantity was deficient, although, as I have said, the quality was excellent. There were no prizes offered for nurserymen, so that none of those fine collections which we see at other shows were here, with the exception of some fine stands offered and set up by Messrs. Geo. Bunyard & Co. (not for competition), the largest number being stands for twenty-four. Of course it will be seen that this makes it more difficult to fill up a show.

In the class for twenty-four the first prize was awarded to Captain Knight of Bobbing, and the second to Colonel Pitt; the former six boxes contained good blooms of the following varieties:—Duke of Connaught, Captain Christy, Ulrich Brunner, Annie Wood, Marie Baumann, Duchess of Bedford, Innocente Pirola, Madame Gabriel Luizet, Pauline Talabot, Charles Lefebvre, Pierre Notting, Le Havre, Madame Cusin, Marie Rady, Etienne Levet, Emilie Hausburg, Star of Waltham, Bouquet d'Or, Marie Guillot, A. K. Williams, Catherine Mermet, Marquis de Sanima, and Général Jacqueminot. In the class for twelve Teas and two Hybrid Perpetuals for a cup given by the Mayor the prize was awarded to Captain Knight for good blooms of Eugène Fürst, Madame Willermoz, Emilie Hausburg, Innocente Pirola, Etienne Levet, Caroline Kuster, Captain Christy, Madame Lambard, Reynolds Hole, Marquis de Sanima, Penelope Mayo, Madame Cusin, Madame Gabriel Luizet, Hon. Edith Gifford, Olivier Delhomme, Alba Rosea, Hippolyte Jamain, Général Jacqueminot, Marie Van Houtte, and Souvenir d'Elise, a very pretty box with the Teas and Hybrids arranged alternately. In the class for eighteen, for members of the Club only, Mr. H. Foster of Ashford was first with a very beautiful lot of blooms, consisting of Baronne Hausmann, C. Ganneau, a flower unknown to me; Captain Christy, Marie Rady, Marquise de Castellane, Duke of Edinburgh, La France, Dr. Andry, Beauté de l'Europe, Red Dragon, Baroness Rothschild, Empress of India, Merveille de Lyon, Madame Cusin, Duchess of Bedford, Marie Verdier, Marguerite Brassac, Marie Baumann, and Madame Emilie Verdier.

In the class for eight varieties, trebles, Colonel Pitt was first with

Madame Victor Verdier, Gabriel Luizet, Prince Arthur, Madame Isaac Pereire, Emilie Hausburg, Villaret de Joyeuse, and Camille Bernardin. In the class for twelve Teas and Noisettes Mr. Killick was second—first not being awarded—with good blooms of Madame de Watteville, Anna Ollivier, Homère, Bougère, Marie Van Houtte, Bouquet d'Or, Marquis de Sanima, Souvenir de Mont Plaisir, Céline Forestier, Madame Trifle, and Marie Guillot. In the class for nine varieties Messrs. Ashurst and Tucker were first with Merveille de Lyon, Charles Darwin, A. K. Williams, Ulrich Brunner, Camille de Rohan, Alfred Colomb, Duchess of Bedford, Captain Christy, and Madame Gabriel Luizet. Captain Thornton was second, and W. Bryant, Esq., third. In the class for six of any one variety Messrs. Ashurst and Tucker were first with Captain Christy.

Some pretty stands of Roses and Ferns were exhibited, the first prize going to Miss E. Bensted, the second to Miss Day, and equal third to Mrs. H. Green and Miss Green. That exhibited by Mrs. Green, although too large for a table, was well suited for a large hall; there was boldness about it, and a good deal of artistic arrangement. For shoulder-knots the first prize was awarded to Miss E. Bryant, the second to Miss Day, and the third to Mrs. H. Green.—D., Deal.

CROYDON.—JULY 3RD.

In the Rose tent of the Croydon Horticultural Society's Show there was a slight falling off in the number of entries, but there were many fine boxes staged. In the nurserymen's classes for forty-eight blooms and twenty-four Roses, three trusses, Mr. F. Cant was first in both, and Mr. B. R. Cant second. Messrs. J. Cheal & Sons were first for twenty-four distinct Roses. For twelve Tea or Noisette Mr. F. Cant was first, and Mr. B. R. Cant for twelve blooms of one variety. In the amateurs' class the 25-guinea challenge cup was awarded to the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, for an admirable collection of thirty-six varieties; Mr. Alfred Slaughter, Steyning, being second. His box contained the best Rose in the Show, Marie Verdier, for which the silver medal of the National Rose Society was awarded. The challenge cup for locally grown Roses was gained by the Rev. W. Wilks, Secretary of the Royal Horticultural Society, for six distinct varieties, and the National Rose Society's silver medal for the best bloom in the local classes was won by Mr. J. Brown, gardener to Mrs. Waterlow, Reigate. Mr. W. Blundell, gardener to G. Christy, Esq., Westerham; Mr. Percy Burnand, Reigate; Mr. E. M. Mawley, Berkhamstead; Mr. E. M. Bethune, Horsham; Mr. D. McDonald-Smith, Caterham; Mr. Councillor Dart, Croydon; and Mr. E. Wilkins, Sutton; were also among the prizewinners.

HITCHIN.—JULY 3RD.

THE ninth annual Exhibition, which was held on Wednesday last in the charming grounds of Hitchin Priory, proved a great success in all ways, and it must be a source of much gratification to the Rev. W. H. Gall, Hon. Sec., and his colleagues, to find how largely effective their labours have been in instilling the love of the Rose and Rose growing amongst all classes in the district; and although attempts have been made in the daily Press to undervalue these fascinating and humanising displays, no better answer could be furnished than the wide-spread contagion which the efforts of this Society has produced in a few years in the locality, growers, lovers, and exhibitors of the Rose having since the establishment of the Hitchin Rose Show more than quadrupled, and some of these have been enabled to battle successfully in open combat with the largest and best growers in the country. (NO 322)

In division A, class 1, open to all England, for forty-eight blooms, the highest honours were awarded to Messrs. G. & W. Burch, Nurseries, Peterborough; Messrs. G. Paul & Son, Cheshunt, being second, and Messrs. Burrell & Co., Cambridge, third. For twelve blooms in this division the same exhibitors were again marshalled in similar positions.

In division B, open to amateur members, for twenty-four blooms, Mr. E. B. Lindsell of Hitchin took the first position, as also for eight triplets, eighteen and twelve Teas and Noisettes, for six trusses of any H.P., and six of any Tea or Noisette, thus carrying off five of the principal prizes. For the twenty-four blooms Mr. J. G. Fowler, Woodford, came second; the Rev. W. H. Jackson, Stagsden Vicarage, running Mr. Lindsell neck and neck for the eight triplets was finally placed second. Mr. Jackson also received awards in four other classes; the Rev. Dr. King, Madingley Vicarage, Cambridge, taking second for eighteen and twelve Teas. For twelve blooms in division B—first, Mr. J. L. Curtis of Chatteris; second, Mr. Jackson; third, Mr. Kipling, Knebworth. In the local classes Mrs. Times, Hitchin, was first, and Mr. Gall second for twelve blooms. For six blooms Mrs. Lucas, Hitchin, was first, and Mr. W. Ransom second; Mr. Welch, gardener to J. H. Tuke, Esq., Hitchin, leading for six Teas, and Mr. Moules second. Mr. A. W. Lines, Hitchin, was first for six blooms, open only to non-winners previously.

For table decorations (Roses, Rose foliage, and Ferns only) Mrs. E. B. Lindsell was awarded first, Miss Grace Lucas taking a similar position for a hand bouquet and for buttonhole and spray.

The Rev. W. H. Gall afterwards hospitably entertained the Judges and his Rose-growing friends at The Sun Inn, at which Mr. J. L. Curtis proposed the health of the worthy host, which was kindly responded to by Mr. Gall, who proposed success to the Hitchin Rose Society, and suggested that as next year will be the close of the Society's first decade, renewed and doubled efforts should be made to render the next Exhibition an advance even on this, which has proved the most successful the Society has ever held.

BATH.—JULY 4TH.

A SPELL of remarkably hot weather brought on Roses generally very rapidly, and as far as the Bath fixture was concerned this might with advantage have been held fully a week earlier than usual. The blooms have opened quickly, and in many instances have proved very fleeting in character, nor do they long retain their freshness and form in the show tents this season; but luckily the Bath meeting was held on a comparatively cool day, and the numerous and very appreciative visitors were able to thoroughly enjoy the beautiful array of blooms brought together from all parts of the country. There was a slight falling off in the number of entries, but a greater per-centage of those who did enter really competed, and on the whole the exhibition fully attained to the well known high standard, and well sustained the good reputation that the Bath Rose Show has gained in former years.

In the premier class for seventy-two distinct varieties, single trusses, four noted firms competed, the first prize being well won by Messrs. Cranston & Co., Hereford, among their generally good lot being exceptionally fine blooms of Sir Rowland Hill, Victor Hugo, and Lady Alice Hill. Messrs. Harkness & Sons, Bedale, were second, and Messrs. G. Cooling & Sons, Bath, third, these exhibits being of nearly equal merit, while an extra prize was recommended for Messrs. Paul & Son, Cheshunt. Messrs. G. Cooling & Sons were well first with thirty-six triplets, distinct, among these being very fine blooms of Her Majesty, Pride of Waltham, Lady Mary Fitzwilliam, Abel Carrière, and La France. Messrs. Cranston & Co. were second, and Messrs. Paul & Son third. With eighteen triplets, distinct, Messrs. Keynes, Williams & Co., Salisbury, took the lead, staging a fine fresh collection, and in this class Messrs. Jeffries & Son, Cirencester, were second, and Messrs. Curtis, Sanford & Co., Torquay, third. Exactly similar positions were held by these exhibitors in the class for thirty-six single trusses, distinct, the exhibits being highly creditable in each instance.

Amateurs were well represented, but Mr. W. J. Grant, Hereford, had matters very much his own way, as he was first for thirty-six varieties distinct, eighteen triplets distinct, and twelve Teas or Noisettes, the other prizetakers in the same classes being Mr. R. N. G. Baker, Exeter, who had two seconds; Mr. S. P. Budd, Bath, and the Rev. F. R. Burnside. In other classes for amateurs, from which the foregoing exhibitors were excluded, the principal prizewinners were Messrs. A. Evans, W. Narroay, and T. Hobbs, while the most successful in the classes confined to local growers were Messrs. S. P. Budd, W. Morgan, Rev. G. E. Gardiner, Rev. C. C. Layard, Mrs. G. L. Hobbs, and Mr. Hill Gray.

There was good competition in the various open classes for a stand of one variety or colour, and these always prove highly interesting. For twelve trusses of any Rose Messrs. Paul & Son were first with Her Majesty in fine condition, and for twelve trusses of any yellow variety Mr. G. Prince, Oxford, was first with a lovely stand of Jean Dueher. With a like number of any crimson Rose Mr. W. J. Grant was well first, a similar award being made to Mr. Grant for a fine stand of La France. The best six blooms in three varieties of new Roses sent out in 1887 and 1888 were staged by Messrs. G. Cooling & Son, who had good fresh examples of Earl of Dufferin, Mrs. J. Lairg, and Madame Bois. Mr. J. Mattock, Oxford, were awarded a first prize for a charming basket of Roses, and Mr. G. Prince received a certificate of merit for his new Rose Souvenir de S. A. Prince. Messrs. G. Cooling & Son were well first for twelve bouquets of Roses, and Mr. J. Mattock second.

NORWICH.—JULY 4TH.

THE Norfolk and Norwich Horticultural Society, which has now been established for sixty years, held their annual Rose Show on the date named in the beautiful grounds of T. B. Coakes, Esq., of Thorpe Hamlet. This is a splendid situation for the purpose, being the highest point in Norwich, from which a lovely view is to be obtained of the surrounding country. The most successful Show in point of attendance that the Society has on its records was held in these grounds in 1882, and perhaps the most disastrous from the same point of view was last year, when heavy thunderstorms deluged the grounds in the afternoon. Many conjectures were made as to the probable nature of the Rose Show in this exceptional season, certainly the earliest in the eastern counties for the last ten years; but cool and cloudy weather prevailed during the morning of the Show, and for two or three days preceding, and this was undoubtedly favourable to the quality of the blooms exhibited, though it was plain that with amateurs the best of the first bloom of Teas was already over.

In the open class Messrs. Burch of Peterborough were first for forty-eight, with a fresh even stand, comprising few faulty and few exceptional blooms, Star of Waltham (which is good this year), Horace Vernet, and Her Majesty being among their best. Mr. Frank Cant of Colechester followed closely with a fine stand, among which Her Majesty, Duke of Teck, Madame Montet, Mrs. John Laing, and Lady Helen Stewart were conspicuous. Mr. B. R. Cant was third, having good specimens of Duke of Edinburgh and Germaine Callot; the latter as a new and little known Rose attracted considerable attention from its fine shape.

In twelve trebles Messrs. Burch were first with really good blooms; Mr. F. Cant, second; and Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, third.

In the amateur classes, Rev. A. Foster-Melliar was placed first for the Sheriff's prize for thirty-six, with large blooms, the best of which were Madame Eugénie Verdier, Fisher Holmes, Comtesse Nadaillac, Marie Raly, and Duke of Wellington. Rev. H. T. Frere, Burston

Rectory, Diss, was second with fine blooms of Marie Raly, Marie Baumann, and that uncertain H.P. Black Prince. T. H. Powell, Esq. (gardener, Mr. Palmer) was third with good flowers of Abel Carrière, Jean Soupert, and Duke of Edinburgh.

Rev. A. Foster-Melliar was again placed first for twenty-four, good blooms of Marie Baumann and Marie Raly being in his stand. Miss Penrice of Whitton (gardener, Mr. Morris) was second, and Rev. H. T. Frere third. For twelve Roses Rev. A. J. J. Roberts was first, cleanness, brilliancy, and neatness as usual distinguishing his stand. Rev. A. J. Fellowes, of Beighton, second; T. C. Bloomfield, Esq., third; and G. S. Culley, Esq., of Whitton, fourth. For twelve local the last named gentleman was first, Mr. R. Cross second, and Mr. Learner third. For six Mr. Culley was again first, Mr. W. Birkbeck second, and Mr. Cubitt of Honing Hall third.

There was a good competition in the class for twelve Teas, which resulted in a popular win for Rev. H. T. Frere, Marie Van Houtte and Etoile de Lyon being his best blooms. Mr. Roberts second with Nadaillac good though not large, and La Boule d'Or in good form. Mr. Foster-Melliar was third with a very richly coloured Jean Dueher and a fine Innocente Pirola among his blooms.

Twelve of one sort of H.P.'s almost invariably produces stands of Madame Gabriel Luizet, this variety's habit of blooming all at once making it useful for this purpose. Mr. Page Roberts obtained second with this Rose, but Miss Penrice beat him with A. K. Williams, and Mr. Powell was third with Baroness Rothschild.

For twelve Teas of a sort Rev. A. Foster-Melliar won somewhat easily with Comtesse Nadaillac, many of them being good blooms, Mr. Powell being second with Caroline Kuster, and Miss Penrice third with a poor box of Homère.

For a class provided by Mr. F. Cant for twelve Roses, including not less than four Teas, Mr. Page Roberts showed another beautiful twelve, a bloom of Maurice Bernardin being very conspicuous in it; Rev. A. L. Fellowes second, Miss Penrice third.

The silver medal for best H.P. was awarded to Miss Penrice for a medium-sized, not perfectly shaped, but very clean bloom of La France, and Comtesse Nadaillac deservedly gained the corresponding honour for Teas for Mr. Page Roberts. The former decision did not meet with unanimous approval.

It was a capital Rose Show, and would have been better if Committees and Secretaries would think of exhibitors in selecting their days. There were actually two other Shows in Suffolk, at Eye and Woodbridge, on the same day; and more than one of the successful exhibitors was endeavouring at great inconvenience to hold the field by an assistant at another Show, whilst coming himself to Norwich to do battle in person. These remarks contain no reflection on the Norwich managers, who in choice of day were first in the field.

It was very pleasant to find that an increasing interest, which is likely to promote the true instincts of gardening in every way, is being taken in hardy perennials. A new and formidable competitor appeared in the principal class for twenty-four bunches in the person of Rev. F. Page Roberts, in whose first prize stand were noteworthy specimens of Scabiosa caucasica, Heuchera sanguinea, Epipactis gigantea, Orchis foliosa, and Delphinium Madame E. Geny. Mr. Corder of Norwich was second with specially interesting bunches of Lilium longiflorum Harrisii, Morina persica, Astrantia carniolica, and Lilium pardalinum. Dr. Beverley of Brundle, Norwich, was third with an interesting stand, many of which, however, were rather flowering shrubs than hardy perennials. The exhibits of pot plants, fruit, and vegetables call for no special comment beyond admiration of the Ferns, British and exotic, exhibited by Mr. H. Trevor. These plants are both perennials and perpetuals, and would be missed, like old faces, if absent from Norwich.

The Norwich Horticultural Society is in a most sound financial condition. It is thoroughly well supported in the city and county, and as the officers work together harmoniously its future appears likely to be even more prosperous than its past.—W. R. RAILLEM.

CANTERBURY.—JULY 4TH.

THE venue of this Society was again changed this year, and the Show was again in the Foresters' Hall instead of as last year in the Deanery Garden, and the day being very bright and fine, a good deal of regret was expressed that the change had taken place. There is always more pleasure on a fine day in an out-of-doors show than in one held in a room, even when the light is good, and the light in the Foresters' Hall is not good. The Corn Exchange, where the Show was first held, is, I think, one of the best rooms for a show that I have ever seen, and that at Winchester about the worst.

There is a good deal of spirit in Rose-growing about Canterbury, and unlike Maidstone, local growers come well forward, although the general public is sadly lacking in sympathy with the Society. In excuse for them it may be said that the exterior is not inviting or attractive, nor the interior, with the exception of the flowers, very exhilarating; but notwithstanding all this there was a very excellent and enjoyable Show, which was rendered especially interesting by collections of cut blooms of hardy herbaceous plants, exhibited by Mr. Clarke of the Maison Dieu Nursery, Dover, and Mr. George Mount of the Exotic Nursery, Canterbury. Owing to the Bath Show being held on this day, at which most of the leading nurserymen exhibited, they were not here to-day, and the competition in the nurserymen's class was confined to Kentish nurserymen, Mr. Geo. Mount taking the leading position, and Mr. Thomas Bunyard of Ashford taking second place with Her Majesty, a grand bloom, showing that when it can be caught it is a grand Rose, but its

uncertainty is well shown by a box of six set up by the same exhibitor (not for competition), in which the flowers were all coarse and rough, Louis Van Houtte, Etienne Levet, Mdle. Eugénie Verdier, Duchesse de Morny, Eugène Fürst, Captain Christy, Ulrich Brunner, Marie Baumann, Merveille de Lyon, Alfred Colomb, Abel Carrière, Thomas Mills, Charles Lefebvre, Auguste Neumann, Elie Morel, Star of Waltham, Duke of Teck, Baroness Rothschild, Madame Victor Verdier, Camille Bernardin, La France, Countess of Rosebery, Duke of Edinburgh, Marie Rady, Fisher Holmes, Duchesse de Caylus, Duchess of Bedford, Prince Camille de Rohan, Prince Arthur, Madame Gabriel Luizet, Xavier Olibo, Dr. Andry, M. Krell, Beauty of Waltham, and Charles Darwin. Mr. Bunyard was third. In the class for twelve Teas and Noisettes Mr. Geo. Mount was the only competitor, and had nice blooms of the following:—Madame de Watteville, Souvenir de Paul Neyron, The Bride, Catherine Mermet, Hon. Edith Gifford, Innocente Pirola, Maréchal Niel, Souvenir de Thérèse Levet, Rubens, Marie Van Houtte, Niphetos, and Madame Caroline Kuster.

Coming now to the classes for amateurs, in the class for twenty-four Mr. R. E. West was first with Captain Christy, Madame Susanne Rodocanachi (notwithstanding her name a very pretty and staying Rose; Mr. West spoke highly of its durability), La France, Comtesse d'Oxford, Alfred Colomb, Marquise de Castellane, Baroness Rothschild, François Michelin, Auguste Rigotard (a fine bloom), Duchess of Valambrosa, Pierre Notting (very good), Annie Wood, Eugène Fürst, A. K. Williams, Marie Verdier, Louis Van Houtte, Madame Gabriel Luizet, Duke of Edinburgh, Senateur Vaisse, Merveille de Lyon, Abel Carrière, and a beautiful bloom of Sir Rowland Hill, of a most lovely colour, fully justifying all that has been said in its praise; in habit, form of flower, foliage, and wood it is exactly like Charles Lefebvre, but the colour is entirely different, being of a beautiful deep claret red. Capt. Knight of Bobbing was second, and Mr. H. Foster of Ashford third. In the class for eighteen Mr. H. Foster was first with Captain Christy, Marie Baumann, Merveille de Lyon, Marquise de Castellane, Magna Charta, Annie Wood, La France, Duchess of Bedford, Empress of India, Baroness de Rothschild, Madame Emile Verdier, Comtesse de Serenye, Général Jacqueminot, Camille de Rohan, Ipswich Gem, and La Fortune. Capt. Knight was second with a box of unnamed flowers. In the class for twelve Teas Capt. Knight was first with Madame Hippolyte Jamain, Madame Willermoz, Marie Van Houtte, Madame Lambard, Souvenir de Paul Neyron, Prince of Wales, Madame Bray, and Comtesse de Sarnia. In Class 5 (local), for twelve varieties, Mr. S. Cooper, Stonley, was first with Dupuy Jamain, Madame Margottin, La France, Baroness Rothschild, Duke of Edinburgh, Marquise de Castellane, Innocente Pirola, and Alfred Colomb. Mr. Stanly second, and Miss E. M. Holdsworth third. In the class for nine Teas Captain Lambert was first with excellent blooms of Madame Lambard, Comtesse de Nadaillac, Grace Darling, Souvenir d'un Ami, Jules Finger, Innocente Pirola, Alba Rosea, Souvenir de Thérèse Levet, and Souvenir de Gabriel Drevel. Mr. Cooper Walker was second, and Miss Hawkworth third. In the class for twelve trebles Miss Hawkworth was first with Baroness Rothschild, Marie Van Houtte, Duke of Edinburgh, and Anna Ollivier. In Class 8, for nine varieties, Captain Martin of Chilham was first with Captain Christy, Abel Carrière, Marie Baumann, Mabel Morrison, Marie Finger, Baroness Rothschild, Duke of Edinburgh, and Violette Bouyer.

In Class 9, for six varieties, Mr. G. Collard of Canterbury with Gabriel Luizet, Baroness Rothschild, Her Majesty, Beauty of Waltham, Fisher Holmes, and La Rosière. Captain Martin was second with Alfred Colomb, Fisher Holmes, Comtesse de Nadaillac, Prince Arthur, Marie Rady. Mr. Rolt was third. In Class 10, for six Teas, Captain Martin was first with Comtesse de Nadaillac, Souvenir de Thérèse Levet, Madame de Watteville, Hon. Edith Gifford, Madame Cusin, and Niphetos. In Class 11 Mr. Elgar with excellent blooms of Baroness Rothschild, Bouquet d'Or, Captain Christy, Eugène Fürst, Louis Van Houtte.

There were some excellent epergnes of Roses and foliage. The first prize was awarded to Mrs. Walker, the second to Mrs. Mount, and the third to Miss Welby. For buttonholes Mrs. Mount was first, Mrs. Rolt second, and Miss Agnes Dean third.

One very pleasant feature of the Show, a large number of herbaceous plants exhibited by Mr. Clarke, and some pretty vases of hardy flowers by Mrs. Mount.—D., *Deal*.



ONCIDIUM LANCEANUM.

THIS can be well grown in a pot or pan, but it succeeds better on a good-sized block or in a basket. During the season of growth it will grow luxuriantly in the East Indian house, at the warm end of the Cattleya house, or suspended from the roof of a house of mixed stove plants. When an attempt is made to confine the roots of this plant in a pot or pan they require the most careful treatment during

the winter to preserve them in good condition; in fact, we have found them perish during the season of growth if overwatered. When grown in pots or pans material that rots quickly should not be used. Three parts of the pot or pan must be filled with charcoal in lumps and large pieces of crock, for the roots cling freely to these, the remaining portion being filled with good peat used in lumps, or, better still, peat fibre, with a little living sphagnum moss on the surface and the sides of the basket, so that it can be removed every season. However good the treatment in pots may be this plant prefers blocks or baskets, so that a considerable portion of its roots can be exposed in the atmosphere. On a good-sized block with a little peat or moss for retaining moisture, or in a basket, it can be kept in perfect health for years. If very little peat or moss is used in the baskets or on the blocks it is almost impossible to give too much water during the season of growth. This can be supplied by syringing liberally twice daily and steeping them thoroughly occasionally. No harm appears to result by removing the plant when in flower to cooler, drier, and more airy conditions. The flowers under this treatment last considerably longer than in a close warm house.

PLEIONES.

These will do during their season of growth at the warmest end of the Cattleya house; in fact, they are not very particular about the position they occupy as long as sufficient heat and moisture is maintained to encourage free growth. From this season of the year they succeed well under the treatment that has been advised for *Calanthes*. They require a good season of growth, and every attention should be paid to the development of their pseudo-bulbs. Liberal supplies of water should be given, and occasionally weak stimulants, when they are rooting freely. Liquid made from cow manure freely diluted with water given in a clear state will assist them considerably.—ORCHID GROWER.

ODONTOGLOSSUM CRISPUM.

I SEND you a few spikes of *Odonoglossums*. I think they will speak for themselves as to their merit, or I shall leave you to do that in your valuable paper. We have at present about 300 spikes of blooms arranged in two houses; they must be seen to realise the effect. Standhall is one of the highest points in Lancashire, and I find that this Orchid does wonderfully well under my treatment. We have three houses of equal size, north aspect, well stocked with *Odonoglossums* of the best varieties that can be secured. The houses are well ventilated at the top and bottom, and I avoid artificial heat as much as possible. In fact, one of our best *Odonoglossum* houses was without artificial heat the whole of last winter. Plenty of pure water and ventilation I believe to be the secret of success in the cultivation of this beautiful Orchid.—ROBERT JOHNSON, *Gardener to Thomas Stutter Esq., Standhall, Whitefield*.

[Splendid spikes and fine varieties, the flowers large, and in several cases boldly and heavily spotted.]

KEEPING LATE GRAPES.

WHILE sending off the last of my late-kept Grapes (new ones are also in use) I enclose a few for your inspection, to show that they can be kept fresh and of good quality till new Grapes are plentiful in the markets. It is alleged by some that Grapes kept in bottles of water lose greater weight than on the Vines. When the sap rises in the Vines the fruit must be removed, and it may not be a difficult matter with market men; but in private gardens, where all the glass has to be in use during winter as storage and for plant protection, the advantage of getting the Grapes cleared out is very considerable, and in a few hours some hundreds of bunches can be placed in the bottles; the cost of labour afterwards does not amount to more than a few shillings. The loss with us is nominal, and reduction of weight nil. Seldom are new Grapes equal in flavour to those which I enclose, and the expense of forcing during winter instead of summer is very much greater. Our Grapes are placed in cupboards formed for the purpose along the walls of the garden office, and are kept dark; air can be admitted if desired. A boy gives the little attention necessary, and I think that it would be difficult to persuade me to return to the old system in vogue when I was a boy. When we had to supply Grapes all the year round by means of pots to ripen fruit in April the results were comparatively a burlesque.—M. TEMPLE, N.B.

[The Grapes received are in excellent condition, the stalks green and the flavour superior to that of any new Grapes we have tasted this year.]

BEGONIA CORALLINA.

THERE are many varieties of *Begonias* which make handsome specimen plants if treated liberally, but amongst them few that can compare with *B. corallina*, represented in the accompanying illustration (fig. 4). Its origin seems to be rather doubtful, but it is generally

considered to be only a variety of *Begonia maculata*, which it most resembles in appearance. Being of easy culture, and very free flowering, this plant is a great acquisition for the conservatory. It is best

individual flowers are not large, but cluster together in such large racemes as to make it a really charming plant. It would form a good companion for *B. fuchsioides* for training up the pillars, but the long

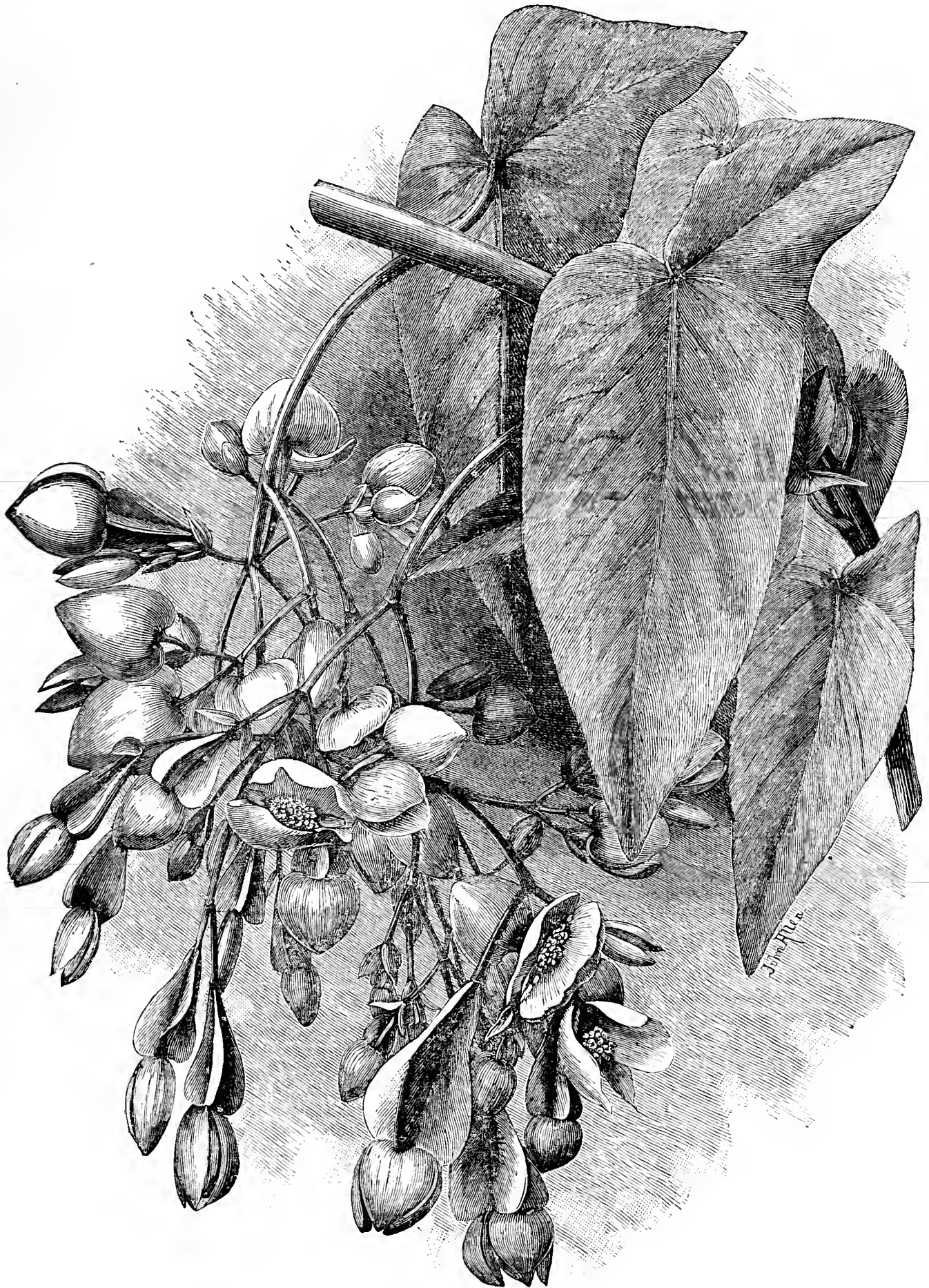


FIG. 4.—*BEGONIA CORALLINA*.

suited for planting out, as it grows to a large size under ordinary greenhouse treatment, and a specimen 8 or 10 feet high, with its dark green glossy leaves almost covered with bright coral-red flowers hanging down in large panicles a foot or more in length, is most effective. The

cane-like shoots should not be tied too tightly or they will not have such a graceful appearance. When kept in pots *B. corallina* flowers freely enough, but does not grow so well, and consequently it is not nearly so handsome.



EVENTS OF THE WEEK.—Highgate Flower Show will be held to-day (Thursday). The following are Rose Show fixtures for the current week:—To-day (Thursday), Gloucester; Friday, July 12th, the Alexandra Palace; the 13th, Eltham and New Brighton; the 16th, Birkenhead and Carlton-in-Lindrick; the 17th, Bedford and Ripley (Derby); the 18th, Sheffield (National Rose Society) and Helensburgh.

— **THE WEATHER.**—A welcome change has occurred in the weather during the past few days in the neighbourhood of London, the sky having been more or less overclouded and occasional showers fallen, but by no means heavy rains.

— **CRYSTAL PALACE ROSE SHOW.**—His Imperial Majesty, the Shah, and their Royal Highnesses the Prince and Princess of Wales, visited the Show at 6.30 P.M., the National Rose Society being represented on this occasion by Mr. Edward Mawley, one of the Society's Hon. Secretaries.

— **A CENTURY OF MEDALS.**—The medal awarded to Messrs. Carter & Co. for their group of Emperor Petunias and ornamental Grasses at the evening fête at the Royal Botanic Gardens makes the one-hundredth medal gained by the firm for their seeds and plants grown from them—a record they believe to be unbeaten.

— **MESSRS. RANSOMES, SIMS, & JEFFERIES** desire to state that Her Majesty was pleased to accept one of their lawn mowers at the Windsor Show, and to purchase another, as also did the Princess Victoria of Prussia.

— **MESSRS. SUTTON & SONS** of Reading have received the following letter:—"Sir Henry Ponsonby is commanded by the Queen to thank Messrs. Sutton for the floral decorations and miniature garden surrounding the Pavilion, which they have had the kindness to present to Her Majesty."

— **THE ALEXANDRA PALACE SHOW.**—At this Show, which is to be held on Friday, the 12th inst., the interesting ceremony of crowning the Rose Queen will be conducted by the Rev. Father Nugee. Mr. R. Beale, the manager of the Show, also intends holding a bazaar for the sale of horticultural literature and surplus Roses given by exhibitors, the proceeds of the sale to be given to the Gardeners' Orphan Fund.

— **DR. LIVINGSTONE STRAWBERRY.**—The sample sent is from the third picking, and therefore not the largest fruit. It is hardy and a robust grower, very prolific, suitable for any soil, and gives heavy crops under trees where other varieties fail; a second early, its latest fruits swelling to a good size.—WM. THOMSON, *Blantyre*. [The fruits received were large enough for any purpose, but so shaken and crushed in transit that their quality cannot be tested.]

— **LONG BROAD BEANS.**—Mr. Heard of Machen House, near Newport, Mon., sends three specimens of Broad Beans grown by his head gardener, Mr. McKinnon. Two of the pods are 13½ inches long and one 13 inches, and Mr. Heard wishes to know whether we have seen any so long? We think they are the largest that have been sent to us, and we have not measured long specimens we have seen on exhibition tables. Perhaps some of our readers have, and can send the dimensions if they exceed those named.

— **THE CHERTSEY STRAWBERRY GARDENS.**—The *Surrey Advertiser* says:—"Chelsea may boast of its Orchids, and Bagshot of its Rhododendrons, but it remains for Chertsey to excel in Strawberry culture. The celebrated Royal Strawberry Gardens at Knowle Hill, cultivated by Mr. Thomas Sharpe, embrace an area of over 7 acres, from which more than a ton of luscious berries are being picked per day. About 1300 lbs. are daily packed in flat baskets and despatched to various parts of the country, and twelve pickers and packers are busily engaged at this work from 4.30 A.M. to 8.30 P.M. At the present time the gardens present an extraordinarily beautiful appearance, the ground being literally red with fruit. They are well worthy of a visit, and an additional attraction is that visitors for a slight fee are permitted to gather and eat the fruit from certain beds at their own sweet will."

— **THE GARDENERS' ORPHAN FUND.**—Mr. George Deal, the excellent Chairman of this charity, desires us to remind our readers that the anniversary dinner and election of children will take place at the Cannon Street Hotel, London, on Friday, the 19th inst., and he hopes all gardeners who can do so, with others who are in sympathy with the object, will make arrangements for attending on the occasion. So do we. The proceedings will be of a most enjoyable character, and a large gathering of horticulturists is expected. Tickets, 5s. each, can be obtained from Mr. A. F. Barron and members of the Committee. In answer to an inquiry we may add that visitors are not expected to attend in evening dress, this being entirely optional.

— **THE RAINFALL AT CUCKFIELD, MID-SUSSEX,** for June was 0.23 inch, being 1.73 inch under the average, rain falling on only three days. Highest temperature, 96° on 7th; lowest temperature, 45° on 17th and 18th. Mean day temperature, 80°; mean night temperature, 51.1. Mean temperature, 65.5°, being 5.2° above the average of the past seven years.—R. INGLIS.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The quarterly meeting of the above Society took place at the Caledonian Hotel, Robert Street, Adelphi Terrace, Strand, on Monday evening, July 8th, Mr. E. Berry in the chair. The Committee are sorry to report the death of one of the members (Mr. A. Barker of Hindlip), who died on June 14th last. A cheque was drawn for the widow for £8 7s. 4½d., the amount standing in the ledger to the credit of the late Mr. Barker. Four new members were elected, and the usual business transacted. A cordial vote of thanks to the Chairman ended the meeting.

— **FAREHAM SHOW.**—We have received a report of this Show, but cannot find space for it for reasons which are apparent. Captain Ramsey obligingly opened his gardens to the public, and his fine display of Roses was greatly enjoyed. He won the chief prize for Roses at the Exhibition "with finely formed and extremely fresh blooms." Mr. H. F. Hawkins, gardener to G. Bishop, Esq., Swanwick, and Mr. W. May, gardener to W. H. Deane, Esq., Fareham, were the most successful exhibitors of plants. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rookesbury Park, was awarded the chief prizes for black and white Grapes, Strawberries, and a collection of vegetables. The Revs. E. S. Pridcaux and T. G. Browne were successful in the vegetable classes, and Mr. E. Penfold, gardener to Sir F. Fitzwigram, Bart., Leigh Park, Havant, sent well grown plants not for competition. The Show was well managed by Mr. Harry Smith.

— **THERE** are some noteworthy CONIFERS AND OTHER TREES in the grounds at Brockhurst, East Grinstead. The owner, Mr. K. R. Murchison, is a great tree-lover, and has embellished his estate with an extensive collection of exotic and native trees, many of which have been planted under his personal supervision. The grounds are extremely irregular, and the wise course has been pursued of planting and furnishing in accordance with the configuration of the place as Nature had provided it. The house is somewhat low, and almost immediately in front of it rises a huge mound, perhaps 100 feet above the ground level, with other banks and slopes undulating, as it were, from it. On and between these Conifers and Rhododendrons have been freely and judiciously planted, and the grounds consequently present a highly picturesque appearance. The trees are a magnificent feature. There is a *Pinus insignis* approaching 70 feet in height, a truly noble specimen, which was planted from a flower pot by an old man still working on the estate, but the veteran's memory is hazy as to the exact date. *Araucaria imbricata* is best represented by a very shapely specimen about 30 feet high. *Picea nobilis* with its beautiful silvery foliage is extremely handsome, and there is a fine tree that was planted by Mr. Murchison himself. Of *Wellingtonia gigantea* there is a handsome pair, about 50 feet high and 11 to 12 feet in circumference at the base. *Picea Nordmanniana*, a fine pyramid of *Pinus austriaca*, and a good example of *Cedrus deodara* were admired. There is also a finely furnished Cedar of Lebanon, and of Oak, Beech, and other forest trees some noble examples. The Golden Yew presents a highly effective appearance with a bright sun shining on its yellow leafage, and a handsome small-leaved shrub, named *Podocarpus andinus*, is graceful.

— **THE WEATHER AND CONIFERS.**—The wet weather of last season and the warmth of the present one have had most beneficial results so far as Conifers are concerned, as those at Brockhurst are making splendid growth, and all on the estate, numbering some hundreds, are in admirable condition; but the Oaks have suffered terribly from the

maggots, in fact the leaves are almost cut to pieces. The marauders are green and brown grubs, nearly 2 inches in length, and where Roses were growing in the immediate vicinity of the Oaks they, too, have been attacked with great severity.

— RHODODENDRONS are a great feature of Brockhurst. They have been planted with a liberal yet careful hand, and large clumps of them occupying prominent positions are a blaze of beauty in their season. They are most effective on the side of the lake, which can be seen from the residence. Here there are huge masses of the best and choicest hybrids, their glowing trusses making a rich display, and in some places overhanging the water. In May and June the Brockhurst Rhododendrons are a sight that cannot be excelled in the county, and perhaps nowhere else in the kingdom are they more advantageously grouped. Many visitors call to inspect them, and none fails to admire the gorgeous effect produced by the large and fine collection of these noble flowers.

— STRAWBERRIES are abundant in the neighbourhood of East Grimstead, also Gooseberries, Plums, and Currants. Raspberries are moderate in quantity. Apples and Pears practically a failure. Of the first named, President and Vicomtesse Héricart de Thury are bearing enormous crops. A bushel and a half had been gathered just before I inspected the beds at Brockhurst, and they were still loaded with fruit. Mr. Simmons (the gardener there) has great faith in mulchings of stable manure. He practises the simple plan of putting out forced plants, trims them in autumn, mulches with good short manure, leaving it till spring, and when the plants are coming into bloom mulches with manure just as it is received from the stable, allowing it to remain all the year, so that its virtues may be washed in by the rains. As he is able to point to good crops annually there is not much fault to be found with his plain practice.—P.

— CROYDON HORTICULTURAL SOCIETY.—At the annual Show of this Society, held in the grounds of Wellesley House, the President of the Society, Philip Crowley, Esq., Waddon House (Mr. W. King, gardener), was awarded the premier prize for nine stove and greenhouse plants in flower, and also in the corresponding class for foliage plants. In the former were remarkably well bloomed *Ixora Pilgrimi* and *I. Williamsi*, *Erica Cavendishiana*, *Miltonia vexillaria rosea* with twenty-one spikes, and a well-grown *Cypripedium Lawrencianum*, having over a score of blooms. Mr. T. N. Penfold, gardener to the Rev. Canon Bridges, Beddington, was second in both classes. He was also awarded the silver medal offered for the best grown exhibit in the Show, with a remarkably well-grown *Asplenium*. Mr. H. Elsley, gardener to Capt. Wright; Messrs. C. Stew, gardener to E. Perrit, Esq.; C. Simmonds, gardener to F. W. Wiltshire, Esq.; J. Rodbourn, gardener to Baroness Heath; and W. Jupp, gardener to Cuthbert Johnson, Esq., were successful in carrying off the chief prizes offered in the local classes. Groups were a great feature in the open class, Messrs. W. King, T. Butcher, and J. R. Box being awarded the prizes in the order named. In the local class Mr. C. Stew secured the first prize, his notable plants being *Gloxinias* of a similar strain. Messrs. J. Laing & Sons, J. Peed & Sons, J. R. Box, J. Cheal & Sons, G. Bunyard & Co., T. Butcher, J. Cooper, and Pascall and Sons (Pottery) supported the Show with exhibits not in competition.

— A ROSE FAIR.—In connection with the above Show the Committee obligingly provided a tent for holding a Rose Fair, the proceeds of the sale of blooms to be devoted to the Gardeners' Orphan Fund. Two Croydon ladies, Mrs. Dart and Mrs. Gunner, kindly presided, and between £12 and £13 were realised.

A. F. BARRON STRAWBERRY.

You tell me I was silent when I sent you the A. F. Barron Strawberry the other day. True, but I had a reason, which was simply to wait until I could speak accurately of this new comer. I have grown it for three years in three positions—due south, due north, and in the open quarters, and my reason for waiting was to test it when grown on a north border. I had a small local committee and no mean judges, each one of whom looked upon it as a sterling novelty, and I agree with their verdict. I take no note of it not doing well at Girtford or Chiswick, because at Girtford Sir Joseph Paxton refuses to grow, and at Chiswick farmyard manure is scarce.

A. F. Barron Strawberry is a good grower, a prolific bearer, and particularly hardy, whilst the fruit is well shaped and has a very fine sparkling flavour; for appearance, which is a great consideration in the market, it stands alone. I have grown Strawberries now for forty years, and can truthfully say that A. F. Barron gives me pleasure that my pen cannot describe. I shall grow it largely.

Touching Noble, it is the very best early Strawberry of my knowledge, and I feel sure if ever a man deserved a testimonial for raising so many good things, that man is surely Thomas Laxton, if it was for only raising Noble Strawberry.—R. GILBERT, *Burghley Gardens, Stamford*.

ALTHOUGH this Strawberry does not make vigorous growth on the hot sandy land of Girtford, it succeeds there better than either of its parents, Sir Joseph Paxton or Sir Charles Napier, neither of which I have ever been able to keep healthy in that garden. At Bedford, on somewhat stronger but not over-enriched soil, A. F. Barron grows and does well, and as its fine flavour, handsome appearance, and fertility are strong recommendations, it will, I believe, be a most desirable sort to grow on ordinary or well-cultivated Strawberry land. As a late forcer, too, A. F. Barron has proved an acquisition.—T. LAXTON, *Bedford*.

FLORAL EXHIBITS.

At the summer exhibitions of metropolitan and provincial horticultural societies the growing importance of the cut flower and floral decoration department is becoming every year more apparent. These exhibits constitute the chief attractions of many shows, and the increasing interest on the part of the public is manifested by the crowds of visitors which gather in the tents devoted to such classes lingering to inspect closely, and not unfrequently to criticise. Flowers are now more extensively employed in home decoration than at any previous period, and though we scarcely rival our American cousins in elaborate and general work of this kind there has been a considerable advance in recent years. The Covent Garden Flower Market during the spring and early summer months affords an excellent idea of the demand existing for cut flowers in London. Most of the large provincial towns have their markets equally well supplied, while enormous quantities are distributed by the smaller florists direct from the growers, and through the street vendors, who also obtain their supplies from the producers themselves.

The greater portion of these flowers are of course sold in small quantities and utilised in adorning a few simple glasses or vases, but during the London season most extensive orders have occasionally been received, especially when the decorations of some mansion have to be carried out in one kind of flower, or at least in two or three shades of colour of the same kind. Then the florists' resources are often severely taxed. At one time perhaps some thousands of La France Rose may be required, at another yellow or scarlet Carnations are wanted in equal numbers. There is now much more general appreciation of decoration in as few tints as possible, the brilliant but usually discordant mixtures of numerous colours having rightly fallen into disfavour. At one establishment the rooms are on special occasions adorned individually with flowers of one colour, but the respective tints are carefully selected for adjoining rooms, so that there is a gradual transition from one to the other. With a view to carrying out this scheme in Roses a visit was paid by the gardener to the Chiswick Conference last week and a selection of varieties made in their different groups of colours to be utilised at some future time in a display of Roses that might be expected to be of a most charming character.

Though many societies devote an important part of their schedules to the floral exhibits, yet very few have ever attempted to provide an exhibition solely devoted to them, and the Royal Botanic Society's Evening Fête at Regent's Park has for some years been the only special floral Show of this character in the metropolis. Liberal prizes tempt numerous competitors, who indicate the diversity of their tastes in the varied characters of their contributions, and the responsibility rests with the judges of showing by their awards which are most in accordance with good taste, thus instructing both exhibitors and visitors. At Regent's Park, however, the erratic nature of the awards has for some time been familiar to those who attend the Fêtes, and on the last occasion (Wednesday, July 3rd) this was even more remarkable than previously. In competitions of floral decorations, it is true that originality of design is comparatively seldom displayed, and there is a tendency to sameness that it is very desirable should be avoided and corrected as far as possible by the adjudicators. But originality is not always accompanied by good taste, and it is easier to break away from a conventional style than it is to produce anything better.

The classes for tables with and without fruit invariably constitute an important feature, and this was so on the occasion under notice, as not less than fourteen were shown, but the majority of these were in the first class for tables 10 feet by 5 feet, decorated with flowers without fruit. The Judges had some ten tables to select from, and bestowed first honours upon Mr. W. L. Buster of St. Mary's Cray for a good arrangement, but somewhat too heavy and dull in colour. Three stands were employed in which *Humea elegans* with Grasses were freely employed at the top, with drooping sprays of *Lygodium scandens*. The flowers of the *Humea* are of

a rather dull tint, especially under artificial light, and the odour is too powerful for some even in a conservatory, while in a warm room it would be more noticeable. The base of the stands comprised Water Lilies, Pelargoniums, Gloxinias, Gladiolus Colvilli, with Caladiums, Panicums, and Fern fronds. The two side stands were rather smaller, but similar, a number of small glasses filled chiefly with Grasses and wild flowers being placed about the table. The second award was made to Miss M. Weedon, Notting Hill, which must be reluctantly characterised as a most inelegant exhibit. It consisted of a huge pile of wild flowers and Grasses arranged in elliptical form 3 feet high, and as much in length. Various umbelliferous plants were liberally employed with faded Poppies and small Campanulas. Four corner glasses and a few small dishes were similarly filled. We failed to detect a single merit in this arrangement; certainly it would have been impossible for persons sitting opposite to see or hold converse with each other at the table. The third prize table from Messrs. E. W. Handley, Stoke Newington, was scarcely less objectionable, but for another reason. A heavy central trumpet-shaped glass vase was employed, 4 or 5 feet high, loaded with Marguerites, Stephanotis, Grasses, and Coreopsis, with drooping sprays of Asparagus plumosus round the tube, and a base of Gladiolus Colvilli, Francoas, Lilies, and Ferns. To see the top of the stand when sitting at the table would have necessitated considerable neck-straining of a disagreeable kind.

It might be thought that a difficulty in finding anything of a more elegant character compelled the adjudicators to award the prizes as they did, but in the opinion of many visitors by far the best in the competition was that from Mrs. Chard, Stoke Newington, for which no prize was adjudged. Unquestionably for lightness and gracefulness it was much superior to the others, and because the style is one that has been frequently seen before in decorations from the same exhibitor should not be allowed to tell against it. Three light glass epergnes, with three small branches each, were employed, the tops being filled with white Clarkias, Rhodanthes, Aquilegia chrysantha, Gloriosas, a few Dendrobium flowers, and Marguerites. At the base were white Lilies, Asparagus plumosus, a few Cattleyas and Irises, long narrow single leaves of Crotons and Ferns. Sufficient colour was employed to render the stands effective without being too bright, and the arrangement was very skilfully managed. Several other designs were notable, one consisting of large dishes of Roses, another of Moss Roses only, a third of white Lilies and Roses in the centre, with six smaller stands of La France Roses and Gladiolus Colvilli; still another comprised flat stands of Coreopsis, Gladiolus Colvilli alba, and Grasses, while one exhibitor relied upon Bougainvilleas and dark Roses in low stands.

The tables of similar size, but dressed for dessert, were not so numerous or so varied, the premier exhibit being from Messrs. F. & C. Osler, Oxford Street. In this large low lamps were employed, with pale cream-coloured shades, a large centre bowl being filled with yellow Sweet Sultans and yellow Dahlias, Liliun auratum, Crotons, and Ferns—altogether a very heavy production. Messrs. Graham & Biddle, of Oxford Street, were placed second for a peculiar but very original arrangement. In the centre of the table was a broad oblong strip of gold satin, upon which was formed a low mound of White Gladiolus Colvilli, yellow Calceolarias, Eryngium flower heads with white and yellow Marguerites and Adiantum fronds. Amongst these were several small plain glass electric lamps, the bright gleams from which would be rather objectionable so near the diners' eyes. The third honour was taken by Mr. J. Chard for a tasteful example in his well known style. Three stands were filled with Rhodanthes, Gloriosas, Pancratiums, Aquilegias, Oncidiums, a few Cattleyas and Gladioli, Peaches, Nectarines, Strawberries, and Grapes being the fruit employed. This was preferred by many of those present to both the preceding tables.

In the bouquet classes exhibits of an unusual character were favoured, though frequently presenting defects of a serious character. Messrs. Edwards of Balham were the most successful with bridal and ballroom bouquets, the first being a heavy mass of white Roses and Stephanotis, the other a huge loose bunch of pink and yellow Roses, with Honeysuckle and dark foliage. Mrs. H. M. Ballingall of Camden Road was second with a tasteful bridal bouquet, composed of Stephanotis, Roses, Gladiolus, Pancratiums, and Adiantums; Mr. G. Gordon following with white Roses and Carnations. The second ball bouquets were from Mr. Youens of Leigham Court, Streatham, who has repeatedly given good examples of his taste and skill, though his bouquet of yellow Centaureas and white Gladiolus was not the best we have seen from his hands; but the charming dress spray, shoulder knot, and fan adorned with white Roses and Woodruff was an admirable exhibit, and well merited something more than the bronze medal awarded.

The decorations for racemes, hanging baskets, window boxes, and other exhibits added to the interest of the display, but do not call for special notice, except that the bright yellow Coreopsis was liberally employed in a number of cases.

At the Twickenham Show, held last week, a pretty feature was introduced in the floral department by instituting a class for "six small table decorations in glass or china vases, not exceeding 6 inches in height and 4 inches in width." All those shown were tasteful and pleasing, the first, from Miss Griffiths of Yelverton Lodge, being single glasses of Gladiolus Colvilli and alba, yellow Marguerites, Brizas, light Grasses, and Adiantums. Mrs. Keston's second prize contribution were neat little glass tripods lightly filled with Iceland Poppies (white, yellow, and orange), yellow Sultans, Marguerites, and a few dark Tropæolums and Grasses. These were graceful and pretty, but wanted a few Fern fronds to complete them. Scarcely less tasteful were the tripods from Miss G. Gardiner; three filled with yellow and red Aquilegias, the other with white Clarkias and blue Cornflowers, the former having much the better effect.

The Iceland Poppies are charming flowers for vases, but as a rule they are shown only with a few Grasses, and have a rather bare appearance. An instance of this occurred at the Richmond Show, where floral exhibits were extremely well represented, a handsome stand insufficiently furnished with foliage losing many points on that account. Blue Cornflowers are seldom seen to advantage in stands of mixed flowers, and under artificial light they are very unsatisfactory, yet many continue employing them at shows. Few blue flowers can be used with good effect, and the tint must be very pure and bright to fit them for such purposes.—L. CASTLE.

ABOUT HARDY FRUITS.

SINCE 1875, when I took up the occupation of my father, who for forty years had followed the calling of market gardener, I have been a close observer of the surroundings of fruit-growing. Being very desirous to secure some improved varieties I determined on first growing a collection, and then reducing the varieties as I found desirable. The result is, I am now reducing my stock to Lord Suffield and Ecklinville Seedling of kitchen Apples; Cox's Orange Pippin and a variety I got for Lady Derby of dessert, Marie Louise d'Uccle of Pears, and the Victoria Plum. All Apples of the Keswick tribe I find are desirable for the north, and with these I include Potts' Seedling, which, however, this year is a failure, the wood being of too gross a nature for last year's miserable summer to mature. This also may be said of all the dessert varieties, there being little more than a sprinkling of fruit on any of them. Fortunately with us Lord Suffield has not cankered, and this year, as is usual, it has decidedly the best crop. As I expected, many I see will fall, but I am already convinced the Lord Suffield will mature its fruit buds for the following season with less sun than any other variety that I have, and as to the fruit it is quite safe to say it will ripen with less sun than with the fruit buds. The Marie Louise d'Uccle Pear is, undoubtedly, a long way down the scale if we consider only quality, but it is possible even as to quality. For a wall in the north of England it is a certain crop, for the open ground quite as good a cropper as the Hensle; the bloom is certainly more hardy, and it has the very desirable characteristic of having the foliage well developed before the bloom opens.

As to the causes of this year's partial failure I find, as is generally the case, there is again a difference of opinion. That there should be such a diversity of thought when the cause of failure is so palpable I consider most regrettable; in fact, more so than in the loss of the crop. Experience undoubtedly makes us wiser—not wise I am afraid; but with the ablest how much easier is it found to pick up than to lay down; or, in other words, to learn than to unlearn. During the winter months, when we had the first of these hard winters, 39° of frost here, I examined to find how the fruit trees were affected, when to my dismay I discovered that the heart of the short stem that connects the bud to the branch was black and as dead as a stone. I at once sent a few to our Editors for their opinion, when, as I expected, and as will still be found recorded, the opinion was given that the Apple and Pear crop of that season would be a failure. But as usual when failure occurs after the blooming there came a discussion, when to my surprise the 39° of frost was exonerated from blame. So it has been again with many. They saw the blossom and looked no further, as though the life so snugly enfolded was of no import. It would be quite as consistent were we to decide that the top coat was the portion of importance and the man within its folds of no consideration. The blossom never fails in its duties, neither does the pent up sap ever fail in expanding to give the first start; so it is the inexperienced, or, too frequently the unthinking, rush into print on the great promise of abundance. My decided opinion is that had the present season been the least ungenial, such was the condition of the vital parts of the embryo fruit here in the north, that we should have had complete barrenness, and I quite as decidedly hold that had we had a week's more sun last season, to have coupled with the present season, this would have been the greatest fruit year that the oldest would have remembered.

I was going to give a few of the more conspicuous peculiarities of

varieties, but my already scribbled sheets remind that I must reserve for a future opportunity. But just a sentence more which I would like to offer as a text for the young and thoughtful portion of your readers to ponder over. With links of the same family by which the universe is held together we have seasons too coupled, and the more we recognise this truth the reader shall we comprehend and be able to perform the duties our calling is surrounded by; in fact, it is the greatest of misfortunes our failing to zealously recognise this potent factor, which we see included in the great and wondrous machinery all in order contributing to our well-being.—JOSEPH WITHERSPOON, *Red Rose Vineries, Chester-le-Street.*



CHRYSANTHEMUM SHOW FIXTURES.

WHY Mr. Hughes should ask me to explain the changing of the dates he refers to of the Hull Chrysanthemum Society I am at a loss to understand, as the alteration of a detail so important is a matter which devolves on the Committee. If he refers to my note (page 444) he will hardly find that I blame the Society to which he belongs for the elating of the dates, but I there say it is regrettable that such a clash should take place, as it undoubtedly will. Exhibitions of any sort, let alone giants like these, ought not under any conditions to be placed in antagonism, although I know well how difficult it is to steer clear of the dates of each other, but the necessity need hardly have arisen for these two societies to have their shows on the same day. Mr. Hughes says I "particularly complain of the unsuitableness of the date of the Birmingham Show for southern growers." I have not yet seen any reason for altering my opinion, and does he know of one other grower in the south who will say it is a suitable date? I should not need to mention this part again, but Mr. Hughes says the object of these handsome prizes was to bring about a contest between growers of the north and south. He cannot have any experience of a southern grower's difficulties in exhibiting a week earlier than that named for the Birmingham Show, much less so late as the 20th November, or he would not say the date is an intermediate one.

The National Chrysanthemum Society hold their great Show on the 12th November this year. Last year it was on the 7th. If the executive did not consider these dates best suited for their Show why did they fix them? The results justified the aim, as anyone could say who saw the exhibition of last year. Now if they were to select dates twelve days later than these I wonder what sort of a show they would get? These are facts which speak for themselves as to the most suitable time for southern exhibitors. The dates are evidently fixed by persons who have experience of southern Chrysanthemum growing.—E. MOLYNEUX.

ROYAL HORTICULTURAL SOCIETY.

JULY 9TH.

THE Fruit and Floral Committees held their first meeting of the year in the gardens at Chiswick, and as the Chiswick Horticultural Society's Show was held on the same day, quite an extensive and varied display was provided, three large marquees, besides a good portion of the conservatory, being devoted to exhibits. The day was warm and fine, and the gardens were looking in their best condition.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, with W. Wildsmith, W. Bates, W. Denning, J. Smith, G. Wythes, W. Warner, Philip Crowley, and J. Wright.

Mr. J. S. Clark, Richmond Park, Staines, sent growing plants of Potatoes in pots, also from tubers in moss, the leaves being distinctly and clearly variegated with white. It is a novelty that growers of curiosities may perhaps like to try (a vote of thanks was accorded). Nine dishes of splendid Strawberries were sent from Mr. W. Allan, Gunton Park, Norwich (a cultural commendation was unanimously awarded). Amongst them the large dark variety, Waterloo, was conspicuous, and though its colour may not be admired by all, there are purchasers willing to pay higher prices for this than any other Strawberry. Mr. Lovel, Driffield, sent remarkable fruiting trusses of Filbert Pine, also a good dish of fruit (a vote of thanks was accorded). Mr. Barron placed on the table fruits of a seedling Strawberry, the result of a cross between *Fragaria lucida* and the Hautbois. It has long been grown in the gardens, and though small is of remarkably rich flavour; a Strawberry that should be increased and grown by connoisseurs.

Mr. J. H. Goodacre sent from Elvaston Gardens a stem of a Melon plant bearing four fine looking well netted fruits weighing 4 lbs. each, and as the quality was good a first class certificate was unanimously awarded. Three of the fruits were produced on a length of stem of less than a foot. It has somewhat the appearance of the old Golden Perfection, and evidently possesses a combination of good qualities. It is named The Countess.

Mr. Charles Turner sent from Slough a dish of a yellow form of the Perfection Tomato, appropriately called Golden Perfection. The fruits were smooth and handsome, and it was recommended that the variety be grown in the gardens for fully testing its merits.

Mr. T. F. Rivers placed on the table dishes of three varieties of Cherries—namely, Early Rivers, large, early, and rich, a variety of undoubted excellence; Bigarreau Ludwig, pale, early, and excellent; and a variety named Olivet, somewhat resembling the Kentish, but three weeks earlier; it bears abundantly on Gooseberry-sized bushes, hence is suitable for small gardens.

Messrs. James Veitch & Sons submitted examples of the Gros Parasseuse Cabbage Lettuce, large, firm, crisp, and altogether meritorious, and a first-class certificate was granted unanimously.

Mr. George sent samples of improved wood wool for packing, softer, sweeter, and whiter than before, being from the Poplar; it is excellent for the purpose suggested.

The Committee inspected several varieties of Raspberries growing in the gardens, and without a dissentient voice accorded a first class certificate for Hornet (Rivers) for its healthy growth and fine trusses of large firm fruit. It has been long grown in quantity at Sawbridgworth, and there regarded as the best Raspberry in the collection.

The Peas growing in the trial ground were also inspected. Some varieties grown under numbers only were passed in consequence. A first class certificate was adjudged for Consummate (Eckford), a dwarf growing variety, 2 to 3 feet high, laden with large dark green pods, and Laxton's Optimum only lost a similar honour by one vote.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair; and Messrs. W. Goldring, Shirley Hibberd, J. Walker, H. Herbst, C. Noble, H. Turner, L. Castle, B. Wynne, J. O'Brien, J. Dominy, J. Douglas, J. Fraser, W. Holmes, and Dr. M. T. Masters.

Messrs. J. Veitch & Sons, Chelsea, exhibited a pretty yellow *Genista capitata*, the small flowered *Hypericum Coris*, with small plants of ornamental Conifers, and the rosy mauve *Notospartium Carnichaelia*. Messrs. Paul & Son, Waltham Cross, had a box of new Roses Marchioness of Lorne and Salamander, both Hybrid Perpetuals and erimson in colour, were notable. Mr. T. S. Ware had a group of hardy flowers, chiefly Lilies and Pentstemons, a first class certificate being awarded for *L. pardalinum* var. *luteum*, yellow with deep maroon spots. A pure white Carnation, Mrs. Frank White, was adjudged an award of merit. Mr. A. R. Brown, Birmingham, contributed a group of *Calceolarias* of many varieties, but small flowers. Mr. Mortimer, Farnham, had a group of a new miniature *Capsicum* in 48-size pots, the plants bearing large numbers of small red fruits (first class certificate). From the Royal Horticultural Society's Chiswick Garden came a collection of annuals with several Ivy-leaf Zonal Pelargoniums. Mr. Gordon, Twickenham, exhibited a collection of Irises. Mr. C. Turner, Slough, sent a box of Carnation flowers; Messrs. Hooper & Co. and Mr. Douglas also having Carnation flowers. Mr. J. Walker, Thame, contributed several boxes of Sweet Williams, representing an excellent strain.

In the afternoon the Floral Committee also held a meeting in the Chiswick Gardens to examine the collection of annuals grown there for comparison, chiefly with a view to determining which are the best adapted for town gardens.

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair, and Messrs. T. Baines, J. Douglas, L. Castle, J. Dominy, H. J. Veitch, and J. O'Brien.

Mr. T. Charlesworth sent a plant of a good variety of *Cattleya gigas*, with richly coloured flowers, but it was not considered superior to others of the better forms of that species. Six panicles of a fine variety of *Oncidium crispum*, named *grandiflorum*, with the flowers over 3 inches in diameter, deep brown, with a yellow centre to the base of the lip were shown. A cultural commendation was recommended for it, but lost, and a first-class certificate was awarded by four votes to two against. Mr. Whillans, gardener to the Duke of Marlborough, sent a plant of a light variety of *Cattleya Mendeli*, named *Duchess of Marlborough*, the sepals and petals white or faintly tinged with blush, the lip yellow in the centre—a delicate and charming variety, which was unanimously awarded a first-class certificate. A plant of *Physosiphon Loddigesii* was shown by Mr. Tautz of Hammersmith, and a botanical certificate was unanimously awarded for it. It has slender spikes of small flowers, with a swollen greenish tube and orange brown sepals.

THE CHISWICK SHOW.—In some departments the competition was not quite so numerous as on previous occasions, but the Show was a good one, fruit, flowers, plants, groups, and vegetables being well represented.

The chief attraction was in the marquee devoted to groups, where Mr. W. Brown of Richmond succeeded in again winning the first prize in the competition for the challenge vase offered by Mrs. Lec. This now becomes Mr. Brown's property, and he well deserves his success, for he has won first honours three times with excellent examples of good taste in arranging plants. It was very light and tasteful, *Lilium lancifolium* and *auratum* with a few *Crotons*, *Odontoglossums*, and *Gloxinias* being employed with excellent effect on a bed of *Caladiums*, *Adiantums*, and small Palms. Messrs. W. Fromow & Sons, Chiswick, were second with a rather heavier group, rich in colour, handsome, but somewhat crowded. E. H. Watts, Esq., Devonhurst, Chiswick (gardener, Mr. A. Wright), was first in a class for smaller groups with an elegant and well-balanced arrangement.

A long tent was filled with decorations, cut flowers, and cottagers' productions. For three stands of flowers and foliage the Duke of Devonshire offered several prizes, the first of which was secured by Mr. J. R. Chard, Stoke Newington, with very light graceful arrangements.

consisting of yellow Aquilegias, Coreopsis coronata, yellow Sweet Sultans, and a few Cattleyas at the base. Mr. Chadwick, Ealing, was second with light stands. Mr. Chard was also first with three bouquets; Mr. W. Gardiner, 127, Queen's Road, was second, and Mr. J. A. Morris, Acton, third. Mr. W. E. Tautz, Sutton Lodge, Chiswick, was first with six elegant buttonholes, and Mr. J. C. Cowley second.

Mr. H. Little, Twickenham, was accorded first honours for Orchids in both classes for six and three, Mr. Cowley following in each case. Messrs. J. Veitch & Sons, Chelsea, had a handsome collection of Shirley Poppies, Irises, Phloxes, and other hardy flowers. Gloxinias were good from Messrs. A. Wright and Davis, who secured the chief prizes. Tuberous Begonias from Messrs. Little, Wright, and Hardy were another feature of the Show. Mr. W. Rumsey had the only collection of twenty-four Roses, taking the first prize for fresh and handsome blooms. Mr. W. Langdon was first for twelve Roses, followed by Mrs. Rust of Kew and Mr. C. J. Waite.

The fruit and vegetable exhibits occupied considerable space in the conservatory, several classes of specimen plants also having a place there. For six dishes of fruit Mr. Bates was first with white and black Grapes, Stirling Castle Peaches, Lord Napier Nectarines, Sutton's Hero of Lockinge Melon, and a neat Queen Pine. Mr. T. Osman, Ottershaw Park Gardens, was second, and Mr. Waite third with Grapes. The chief honours for vegetables were secured by Messrs. Waite, Coombs, Palmer, and Chadwick.

STRAWBERRY CULTURE.

A SHORT time ago we received a pleasant letter, from which the following is an extract:—"Have you any contributor who can send you a draft copy of a contribution sent to the *Cottage Gardener* so long ago as 1851? I have had the curiosity to con over it, and if you examine it I am not certain it may not be considered worth printing again for the perusal of the present generation." The writer of the letter and of the yellow-with-age MSS. is Mr. Robert Fenn of Potato fame, and we shall be very much surprised indeed if any other person can send us the original copy of an article that was published in the *Cottage Gardener* nearly thirty-eight years ago, and if he can, and it is as good and pleasantly written as the one following, we will print it again. The "present generation" of young gardeners will perhaps note that Mr. Fenn when he was young "wrote over again," and no doubt improving as he went along, what he intended for the press, retaining the draft, and that practice no doubt enabled him, as we know it has enabled others, to write freely and agreeably. That he succeeded in his early effort is apparent by the editorial note that was appended when the article first appeared under the once familiar *nom de plume* of "Upwards and Onwards." Mr. Fenn characteristically observes he "struck seventy-one last February, and is still pegging away at horticulture and agriculture." Many older than he, we are glad to know, are still engaged in gardening, and we trust he has yet some years of pleasurable work before him.

If anything new or useful can be derived from my practice in Strawberry culture, as I here detail it, the presumption of my mite as a contribution to your ever-welcome-to-me, and generally, I should conceive, useful periodical, will, I hope, be atoned for, notwithstanding the great deal of matter already known which it may contain. The site I choose for my Strawberry ground is that on which either my early Peas, Potatoes, or Cauliflowers are grown. These come off in July, and allow me two months to well trench, manure, and pulverise the soil. I invariably in trenching (2 feet deep for Strawberries) keep the bottom spit down, and if I can get it I use a barrowload of manure to each square yard of ground, mixing it equally through the whole body of the soil. I allow the soil to lay as rough as possible after the first trenching for a month. I then trench it again, but this time add no manure, leaving the surface as I proceed quite rough, in order that the sun and air may act upon it as much as possible. It will settle down nicely by the middle of September, at which time on the first favourable rain, but not till then, I place out the young plants for good.

I keep a few plants of each kind of Strawberry I cultivate in a distinct part of the garden. These I term my breeders, from which every runner that appears is carefully pegged down the moment it shows a leaf, and so on till such time as the required quantity is provided. Those which appear after this on the mother plants I cut off without mercy, and they accompany the refuse to the dung-pit, as well as every fresh runner that attempts to show itself from those previously pegged down. I have now (July 12th) an abundance of healthy runners rooting. They will be ready to prick out in about ten days, and I intend them to occupy a site now taken up with a row of Bishop's dwarf Peas, which will be off the ground by that time.

As soon as these Peas have done bearing the ground will be well forked, a tolerable sprinkling of rotted manure added, and the young plants pricked out thereon 9 inches apart. I take them up carefully from the ground on which they are pegged down with a garden trowel, allowing as much soil as will cling to them to do so, though in this operation I like to cut off the points of the young roots in moderation, as this induces them to send out fresh roots nearer home. After they are pricked out (in which operation I am careful not to bury the crowns), I keep them well watered until they have taken good root. I do not let them produce a single runner, and of course all weeds are eradicated from them as they appear. I keep the ground repeatedly scarified. This brings us, we will say, to the middle of September,

when, on the first wet day, even if a thorough drizzling should be the result, I plant out the Strawberries.

The varieties of Strawberry I cultivate are Keens' Seedling, the British Queen, and Elton. I allow them to bear two years, and then invariably dig them down, at least this was my practice when I lived in the vicinity of Ludlow. I was not acquainted with the British Queen until I came here (Woodstock), and I find after three years' familiarity with this sort and on this soil (a gravelly loam), I must propagate new plants yearly, as I find the two-year plants are apt to die away just before they arrive at their blooming state; and so far as my knowledge of them goes I cannot prevent them doing so, nor can I find out any assignable cause for their decay. The yearling plants with which I filled up the rows last year are healthy. Therefore it cannot be supposed that the severity of winter has in this particular case anything to do with it. With the latter and former kinds I shall pursue my old two-year system of cultivation. My distances of planting out are—for Keens' Seedling, 1 foot 6 inches between the rows, and the same distance between the plants; British Queen and Elton, 2 feet between rows, and 1 foot 6 inches between the plants. I allow an alley extra of one foot between every two rows of plants.

At planting-out time I take up the young plants from the ground on which they are pricked out, with tolerable balls of soil adhering to the roots. In this point I am very particular, and of a necessity the roots in taking up the plants become circumscribed a little by the action of the trowel or small spade (the latter instrument I generally use at this stage of the process); this mild mutilation still causes an increase of roots nearer the plants, and more useful members of them.

I prick out my runners as near the planting ground as possible, in order that I may step a few paces, and deliver the plant directly off the small spade into the hole prepared for it. I need not explain the why and wherefore of this proceeding. I am particular in not burying the crowns of the plants and in not mutilating a single leaf if I can possibly help it. Attend to watering the plants a short time if necessary, eradicate all weeds, and keep the ground, but mind only the surface, stirred about them. Do not take a leaf off them until next March, and not then even unless the leaf is withered.

The beginning of next March. Many a cold dreary day will have to be borne before that day arrives, many a store of knowledge laid up in those long winter evenings, and many a bushel of soot saved from the winter sweeping of our chimneys for our Strawberry grounds in the beginning of March. Soot mixed with an old Cucumber bed is a top-dressing I always prepare for my Strawberries. I mix it at the rate of a peek of soot to every wheelbarrow load of the said Cucumber bed, and the manner I apply it is as follows:—I shovel or cause to be shovelled off about 1½ inch of surface soil flanking the first row of plants. This is wheeled and laid in a parallel line with the last row. Then comes the mixture of soot and manure, which is spread 2 inches thick on the surface from whence the soil was removed. Now step between the next two rows of plants, shovel the soil off over in a similar manner, spreading it evenly over the 2 inches of manure, which it will slightly cover and prevent the escape of the nutritious gases of the manure, prevent its becoming dried by the sun and winds, and withal make a tidy appearance. Follow up this proceeding until the whole is finished, and the first soil that was removed will cover the last layer of manure. The rains will wash down the nurture of the manure just as the plants are coming into full life and activity, ready to take advantage of these good things.

So far so good till the blooming period, at which time, if it should prove dry, I give the plants a thorough soaking with soapsuds and water, about half and half and warm, once a week. Our laundress for years has been in the habit of throwing her soapsuds away. I begged of her to allow it to be brought to me once a week, which she kindly acceded to. As Beau Brummel formerly said of starch, so I sing in praise of soapsuds. "It is the man," or, as we must say, "It is the Strawberry." It has an astonishing effect on fruit and vegetables if given just as they are coming into production, and against blight I think my trees can testify it is equally good. My odd man, when I first began to send him for it, I fancy thought me a little crazy, but now he tells me that the suds which his old woman makes he applies to his own garden. As the Strawberries come into bloom they will struggle to reproduce their kind in the shape of runners. These I treat as utter abominations. I go over, or cause to be gone over, weekly every plant with a pair of sheep shears, and clip off every runner in its infancy.

Now in what manner can we protect the fruit from becoming spoilt in its ripening process? It is a fact, I have tried tiles, straw, slates, short-mown grass, and have left the fruit to take its chance, and I like neither way. The tiles harbour the slugs beneath them, preclude the air and light from the soil, and all become damp and stagnant about them. Slates are no better, but in addition soon become burning hot, or are in the extreme of cold. Straw encourages the mice, which not only nibble the Wheat which remains in it, but nibble off numbers of the berries also. Short grass in a wet time becomes mouldy, and sticks to the berries as badly as dirt, and leaving the fruit to be dashed and splashed on the ground by every pelting storm, I find the most disconsolate proceeding of all. Some good people go to the enormous expense of building a garden wall, plant choice trees, and then in the nick of time, and just as they would if they could come into bearing, they allow the poor things to take their chance, and get no return for their money or even the satisfaction of their garden looking decent.

This is really allowing the "feelings to go before the understanding." Certainly if a man sets himself to think, it matters not if the object be small or great so long as he does think, and thinks to the purpose.

Where I formerly resided in Salop there was a great quantity of the shrub Snowberry. The roots of these Snowberries had run along and intersected the shrubbery in all directions, throwing up suckers, and forming, in some places, an almost impenetrable jungle; and the bright idea came into my head one fine day that this stuff might be made useful in some way as to protecting my Strawberries. I thought at first of spreading it entirely over the surface of the ground, but concluded that would be too gawky. A few hours after I was looking at some yellow Sallows, and the idea came upon me in a moment. The Snowberries certainly would make nice little faggots, and long ones, too, bound round with some of these very Sallow twigs.

It was winter time. I set to work next day, and did not cease this employment till 200 of these little faggots were completed. They were each 5 feet long, 6 inches in diameter, rather flat than round, and tied rather loosely with the yellow Sallow twigs mentioned above. The small side-spray, of which there was a profusion, was allowed to remain rather loosely about them. I placed them in a dry loft till the proper period of using them.

I placed these alongside my Strawberries about the time they were coming into bloom. I fastened each faggot down in its place with a hooked peg sufficiently long to steady it; for expedition, neatness of look, protecting the fruit from wireworms, slugs, and dirt. Let the rain, however severe it might be, pour upon them, it could not injure them; they were either suspended in the air, or reclining on the sides of the faggots, and in ten minutes after the severest storm were perfectly dry, with scarcely a splash of dirt upon them. The rows of red berries exposed to view irregularly along the side-spray of the faggots have a rich and very pretty appearance. The plan perfectly satisfied me, and I intend to improve upon it another year. The faggots were taken up after the bearing season was over, and placed in the dry, and would probably, and have, for all that I know to the contrary, lasted till this time. We came to this place the following spring before the Strawberries came into bloom, and we found not a plant in this garden to faggot. I had a fine flowery description given to me of this garden before I saw it; but, alas! what a "baseless fabric of a vision"—how supremely bamboozled was I. I found it a dreadfully worn-out affair, and almost as far off what it was represented to be as it is to its antipodes. However, upon the principle that when a man's cart sticks in the mud, it is very little use calling on Jupiter for assistance unless he puts his own shoulder to the wheel, I set myself to work. The following winter found this garden very much resembling a gravel pit.

I had the good fortune to meet with one of the best working labourers in this country, and he came to me with the understanding that he was to do as I wished, and not to argue on a matter, whether he thought it right or wrong (the man that I employ occasionally now comes upon the same principle, and it saves me an immense amount of time and argument). Suffice it to say, the following spring found this garden under quite a new arrangement, with Strawberries again in perspective. I have explained how I placed the small faggots along each side of the plants there; but as each of my plants are 1 foot 6 inches apart, there are interstices between each, which also require a something similar to the sides. I find, in order to report progress "faithfully," I must here make another digression. I have no Snowberry undergrowth here to make faggots; and, in fact, being in a town, as we are, I have not got any wood at all but by purchasing.

Hereon hinges a tale of wants. I wanted small spray for making my faggots; I wanted dwarf Pea sticks; I wanted charcoal for potting purposes; I wanted wood ashes when sowing my seeds; I wanted stout sticks for different gardening purposes; I wanted slender stakes and sticks for my flowers; I wanted stakes with forks, and pegs with hooks; I wanted something, and after all this picking and choosing, to burn the large and small wood remaining over and above economically, and our household wanted home-baked bread. Now comes the explanation. This house had been in existence, according to the chronicles, this two hundred years, and most likely, for that period of time, its inhabitants have felt themselves dissatisfied with eating baker's bread—I know I did—and I did not see why, even if the house had existed so long without an oven, that it should do so any longer. The Strawberries were at the bottom of all this. If wood was bought to heat the oven, the small faggots and all the other et-ceteras would follow in the wake. A useless copper boiler was instantly turned out of the kitchen, and a nice little oven built on its site, at a very little expense, a convenience that we could not possibly dispense with; and yet see how the thing originated—merely because I found myself in a fix as to the Strawberries. These are all mere trifles, yet in the aggregate they make a sum of human happiness. The small faggots I make here from the wood we buy are chiefly composed of Hazel. They are 4 feet long, 6 inches in diameter, and instead of Sallow twigs I use tar-cord for bands. In the interstices between the plants I place loose sticks cut about 1 foot in length, and in sufficient quantity to keep the fruit well from the ground; the faggots I place exactly as heretofore.

Now the last, and not the least, enemy are the birds. I defy them also. Their numbers are legion. My Strawberries are so planted, that the old mended fishing-nets I buy exactly cover two rows. Up the centre of these two rows I drive some stakes (about 1 inch diameter, 2 feet 6 inches long) into the ground, allowing their tops to remain above the leaves about 6 inches. I place them from 10 to 15 feet apart. Along the top of these stakes, which have a short natural fork on their

tops, I strain a line of tar-cord—the forks at the top of the stakes being merely for the convenience of so doing. The net is now placed along the top of this, and strained down to the small faggots at the sides, which effectually secures it, and keeps it down in a kind of way that I defy any bird to gain admittance; and, in consequence of the net being suspended along the tar-cord above the plants, the foliage remains in its natural position, allowing the sun and air to penetrate and circulate in every direction without let or hindrance.

In gathering the fruit it is merely necessary first to release the net on one side of the two rows entirely; let it remain suspended on the top of the tar-cord, and gather the fruit off that row; then fasten down that portion of the net, and proceed on the other side in a similar manner. In unfastening the net from the faggots, the utility of pegging them down will be at once perceived.

The after-management of the plants that are to remain till another year claim my attention unceasingly. I keep them free from all runners and weeds, and the surface soil amongst them well scarified, but never on any account more than inch in depth. As to cutting off a healthy leaf, fancy cutting off a little piece of one's own lungs! would it be possible to enjoy the full vigour of a constitution after that?—UPWARDS AND ONWARDS.

[We hope to hear from this correspondent very often; he is "a fellow of infinite humour," but a good gardener withal.—ED. C. G., July 12th, 1851.]

CABBAGE LETTUCE NEW YORK.

I HAD some seeds sent for trial this spring, and amongst them was a small packet of a Cabbage Lettuce named New York, which I have no hesitation in saying is a real acquisition, and when better known it will become a general favourite with growers and consumers. It is the largest Cabbage Lettuce I have seen. It is a quick grower, hearts well, comes into use very soon, and stands for a long time in good condition. The quality is excellent; it is white, sweet, and crisp, and stands the heat and drought without running to seed better than any Lettuce I know. Paris White Cos and All the Year Round Cabbage Lettuce were sown with it on the same border on the 14th of March, and are now bolting rapidly, while New York is as firm and crisp as could be desired, and not the least signs of it running to seed. I consider it the best Cabbage Lettuce in cultivation.—A. PETTIGREW, *Castle Gardens, Cardiff*.

HORTICULTURAL SHOWS.

RICHMOND, SURREY.

THE Richmond Horticultural Society's fifteenth annual Show was held as usual in the Old Deer Park, Richmond, and amply realised the favourable expectations announced a short time before. It was, in fact, one of the best the Society has had both in extent and quality of the exhibits generally, while it is doubtful if the display of Roses and floral decorations have ever been equalled at Richmond. The Roses in particular were very numerous, and it was said that as many were shown as at the last three or four exhibitions together. Four spacious marquees were devoted to the exhibits, the largest being 240 feet long by 60 feet wide, and this was occupied with the specimen plants and groups, the last named constituting one of the special features of the Show. The other marquees were filled with Roses, miscellaneous cut flowers, vases, &c.; the fruit, vegetables, and cottagers' productions also having a tent to themselves. The competition throughout was very keen, and not one of the 103 classes was unrepresented, nearly the whole of the prize money was appropriated, and in some cases there were eight and twelve entries in each class. The weather proved exceptionally fine, a remarkable contrast to that experienced at last year's Show, and the result was the receipts at the gates were nearly doubled. The courteous Hon. Secretary, Mr. J. H. Ford, his energetic assistant, Mr. Gribble, and the Committee must be congratulated upon the well-merited success of their efforts to maintain the reputation the Richmond Show has so long enjoyed.

Plants, Trade Groups.—Messrs. Laing & Sons, Forest Hill, had a bright group of Begonias, Lilliums, and Orchids set in foliage plants. Messrs. Puttock & Shepherd of Kingston had a very pleasing group of Lilliums, Bouvardias, Petunias, with some good Palms and Ferns for a background. Mr. Gordon of Twickenham showed one of his fine collections of Lilliums with Acers for dressing. Mr. J. Chambers of Hounslow had a collection of Diplacis, Phloxes, &c., with beltings of his fine white Viola Snowflake.

Competing Groups.—Of these there were three in the chief class, and Mr. W. Brown of Richmond, practically the champion of the district, was placed first with one of his best arrangements, in which a few highly coloured Crotons and Lillium auratum told well. Messrs. Fromow & Sons, Chiswick, were second, and Mr. W. James of Norwood, who trusted chiefly to Orchids for effect, was third.

Smaller Groups.—The best of these came from Mr. Buckland, gardener to G. J. Adkins, Esq., whose group, if less gay with colour than the second placed one, which was bright with Orchids, was at least far more tastefully arranged. Mr. F. Wigans, gardener of East Sheen, was second. Mr. H. Little of Twickenham had a fine collection of Orchids not for competition, which formed a special attraction. There were Cattleyas, Oncidiums, and Miltonia vexillaria in quantity, and numerous other forms in great beauty. With competitive plants Mr. Little was well first with six bold specimens, having Cattleyas Mossiae

and Mendeli, *Lælia purpurata*, very finely flowered, and huge pans of *Cypripediums Veitchi*, *barbatum superbum*, and *Lawrenceanum*. Mr. James was second, having a good piece of *Cymbidium Lowi* and good *Cattleyas*.

Stove and Greenhouse Plants.—Mr. Finch, gardener to J. Marriott, Esq., of Coventry, was an easy first with six specimens, having *Erica Cavendishiana*, *Ixora Williamsi*, *Darwinia fuchsoides*, and good *Cattleya Gaskelliana* as his best plants. Mr. James was second, and Mr. A. Bates, Poulett Lodge, Twickenham, third. In another class Mr. Bates was a good first with six capital plants. Palms and Ferns were all fairly good, but in the press of matter we cannot further allude to them. *Fuchsias* were small and far below the old Richmond standard.

Pelargoniums made a brilliant show, Mr. C. Turner having first place with six fine show varieties in *Despot*, *Goldmine*, *Outlaw*, *Amethyst*, *Martial*, and *Marguerite*, finely flowered; Mr. Hibberd, gardener to W. Clay, Esq., Kingston, coming second with small plants. Mr. Turner was the only exhibitor of *Pansies*. In a group competition for *Pelargoniums* Mr. Turner was again first with some superbly flowered plants, the which were marred by far too large labels. Mr. H. Little came second with a very gay group; also Mr. Hibberd showed a bright group, but not for competition. In the Zonal class, the sixteen plants staged making a brilliant show, Mr. Coombs, gardener to W. Furse, Esq., Teddington, was placed first with *Robert Bloomfield*, *Henry Jacoby*, *Mrs. Gibson*, *John Gibbons*, and *Queen of the Belgians*. Mr. Little was placed second, having some very fine singles, and Mr. Barnes, gardener to S. Graham, Esq., was third. Mr. Little was the only exhibitor of *Ivy-leaved forms*; he also had the best six *Begonias*, other plants being poor indeed. There was good competition in two classes for nine *Gloxinias*, in one class Mr. Coombs having the best; Mr. Waite, gardener to the Hon. Colonel Talbot, Esher, whose fine plants had been too much shaken, coming second. In the other Mr. White, Redlees Gardens, came first, also with good bloomed plants, and Mr. Hooke, gardener to J. R. Hilditch, Esq., was second.

Hardy Flowers.—Messrs. Barr & Son and Messrs. Collins and Gabriel made a fine show with these, the former occupying nearly an entire tent with their display. This included almost all things hardy now in bloom.

The Roses, as already noted, were a wonderfully attractive feature, and the Princess Mary, with her daughter, spent a considerable time in inspecting them. Notes on the winners of the prizes and the classes appeared under the Rose Shows last week.

Table Decorations.—These always form at Richmond a large and attractive feature, but we can only refer to them briefly. Mr. J. Richard had the best three stands dressed in his usual elegant fashion. Mr. Chadwick, Hanger Hill House Gardens, Ealing, was second with others rather too thinly dressed. With two stands of natural flowers Miss A. C. Clarke, Twickenham, came first, having simple *Poppies*, grand *Daisies* and *Grasses*; whilst with a single stand Mrs. Gardiner, of the Police Orphanage, was placed first. Messrs. F. Perkins & Son, Coventry, were first in two classes with superb bouquets, most elegantly arranged; Mr. Hermann, of Bromley, Kent, being second in each case.

Fruit.—Exhibits were plentiful, though in no case very meritorious. Mr. Cakebread, gardener to Sir P. Rose, Bucks, took the first prize for six dishes, having fair *Black Hamburgs* and *Foster's Seedling Grapes*, grand *Grosse Mignonne Peaches*, richly coloured *Lord Napier Nectarines*, *Brown Turkey Figs*, and *Hero of Loeking Melons*. Mr. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, came second, having very good *Black Hamburg Grapes*, wonderfully coloured *Elruge Nectarines*, &c. The latter was first with three bunches of *black Grapes*, having good *Hamburgs*, whilst Mr. Thompson, gardener to Messrs. W. & E. Wells, of Hounslow, came second with very good *Madresfield Court*, Mr. Cakebread coming third with the same kind. Mr. Osman had the best whites in handsome but greenish *Muscat of Alexandria*. Mr. Bates, Poulett Lodge, Twickenham, had the best three bunches of *Hamburgs* in the local class for *black Grapes*, and Mr. Munro, gardener to C. D. Paul, Esq., Twickenham, the best three bunches of *Buckland Sweetwater*, in the white Grape class. The latter also had the best four dishes of fruit. Mr. Bates came first with a pretty *Queen Pine Apple* in that class. Very richly coloured *Lord Napier Nectarines* from *Orleans House* were the best in their class; and *Condor Peach* proved the best in its class, shown by Mr. Sullivan of *Rochampton*. The best dishes of *Strawberries* were *President* and *Sir J. Paxton*, shown by Mr. Howell of Twickenham.

Vegetables.—In the open classes Mr. Waite, as usual, took the chief prizes, being first in the class for twelve kinds, with fine *Early London Cauliflowers*, *Globe Artichokes*, *White Tripoli Onions*, *Duchess of Albany Peas*, *Ashleaf Fluke Potatoes*, *Perfection Tomatoes*, &c. Mr. Garrod, gardener to T. M. Tindall, Esq., Twickenham, was second; and Mr. B. White, Redlees Gardens, Isleworth, third. In a class for nine kinds (the prizes given by Messrs. Jas. Carter & Co.) Mr. Waite was again first, as also in an open class for the prizes offered by the *Native Guano Company*. Mr. Coombe, gardener to the *Comte de Paris*, *Sheen House*, was second in the Messrs. Carter & Co.'s class. There was excellent competition in classes for *Cucumbers*, *Melons*, &c., the prizes offered by Messrs. Sutton & Sons, Reading; and also in numerous other vegetable classes.

[This report was unavoidably crowded out last week.]

TWICKENHAM SHOW.

THE above Society held its twentieth Exhibition in the grounds attached to Poulett Lodge, Twickenham, on July 3rd last, and the four large marquees erected for the purpose contained a varied and interest-

ing display. Plants, cut flowers, fruit, and vegetables in the amateurs' and gardeners' classes were well represented; the cottagers also had a tent, in which were staged their numerous productions. The competition was not quite so keen in some of the specimen plant classes, and the fruit classes, which have received extra encouragement in the shape of additional prizes, were not so well filled, but the season has had something to do with this no doubt. Altogether the supporters of the Society had every reason to be satisfied with the Show, in the production of which the Hon. Sec. (Mr. J. F. G. Pugh), with the Committee (especially Mr. Bates) worked so energetically.

Some reference is made in another page to the floral exhibits, which constituted one of the most important parts of the Show, and to the other departments we can now only devote a brief space, owing to the pressure on our columns this week. In the plant marquee Mr. H. Little was first for six well-grown and freely flowered *Orchids*, chiefly excellent *Cypripediums*. The same exhibitor also had a handsome group of *Orchids* not for competition, which was very highly commended; and in the afternoon Mr. Little, who is a very skilful amateur photographer, showed a marvellously fine representation of the giant Aroid, *Amorphophallus Titanum*, which recently flowered at Kew. Specimen plants were shown by Messrs. Parsons and Munro, who shared the honours between them both for fine-foliage and flowering plants.

The groups invariably make a pleasing feature at Twickenham, and on this occasion a large marquee was devoted to them. With a group in a space of 100 square feet Mr. H. E. Fordham of Twickenham was first with a most tasteful and well-finished arrangement, followed by T. Twining, Esq. (gardener, Mr. Parsons), and Mr. Goodwin. In the smaller group class G. J. Atkins, Esq. (gardener, Mr. J. Buckland), was first; Messrs. Little and Twining being second and third. In the Grape classes Messrs. Thompson and Waite won the chief prizes, the latter also securing first honours for vegetables. Of the non-competing the specimen plants and *Poppies* from Lieut. Nicholson, Poulett Lodge (gardener, Mr. Bates), a group of *Caladiums* from Messrs. Hooper & Co., the splendid collection of *Roses* from Messrs. J. Veitch & Sons, and the choice *Roses*, including eight very fine blooms of *Her Majesty* from Mr. Wm. Tayler, were the principal, besides those already mentioned.



FRUIT FORCING.

VINES.—*Late Grapes*.—Examine these without delay for the final thinning, giving the berries ample room for swelling, so that air can pass through the bunches and admit of ready scrutiny for decayed berries. Keep the Vines free from all gross laterals, not allowing them to make strong entangled growth and have to remove it in great quantity. It only gives a check to the roots, and is one of the chief causes of shanking. Afford copious supplies of water or liquid manure, and mulch with light open material.

Young Vines.—Afford water liberally, mulching and keeping the border moist so as to encourage surface roots. Maintain a moist atmosphere by frequent sprinklings of available surfaces, and syringe the Vines on fine afternoons, closing early to attain a heat of 90° or 95°. Ventilate freely through the early part of the day to insure a short-jointed solidified growth, and allow the laterals above the wood the Vines are to be cut back to ramble at will. Do not permit any interference with the principal leaves that feed the buds at their base expected to fruit next season. They must have full exposure to light and air, and be kept clean and healthy as long as possible.

Pot Vines for Early Forcing.—The growth being completed lessen the supplies of moisture, discontinue syringing, moderating the supply of water at the roots, admit air freely, and afford all the light practicable to the principal foliage. If the canes do not ripen well keep through the day at 85° to 95° by moderating the ventilation, and admit air freely at night.

PEACHES AND NECTARINES.—*Early Houses*.—The fruit being cleared off, syringe forcibly to dislodge red spider. Cut away all shoots that have borne fruit except extensions, and do not leave more shoots than will be required for next year's fruiting. Winter pruning should be abandoned. If the roof lights are not moveable, ventilate to the fullest extent possible, and give the inside borders thorough waterings with liquid manure, which will help the trees to swell the buds. If the roof lights are moveable, take them off about the middle of the month. Rain has a peculiarly invigorating effect on forced trees, and the borders become thoroughly moistened in autumn.

Succession Houses.—With the fruit taking the last swelling, syringe forcibly to keep down red spider; indeed, the trees must be cleansed of the pest, if there be any, before the fruit commences ripening, either by means of the syringe or the application of the insecticide. Supply liquid manure abundantly to inside borders, unless the trees are gross, when it will only aggravate the evil. Mulch inside and outside borders, keeping the material moist, so as to have the roots active near the surface. Ventilate a little constantly, and increasing with the advancing sun. Main-

tain the day temperature at 80° to 85° with sun, and close sufficiently early for a rise to 90° or 95°, and admit a little air before night. As the fruit approaches ripening ventilate more freely, and do not allow so great a range of temperature. Keep water from the fruit, but damp the house, especially on hot days. Tie and regulate the growths, having the fruits well exposed to the sun. Stop laterals to one or two joints of growth, and avoid overcrowding.

Late Houses.—Train the growths thinly, keep laterals closely pinched, and stop gross growths so as to cause an equal distribution of the sap over the trees. If not restrainable by pinching remove some growths altogether. Reduce the fruits to the number that will be required for the crop, and keep the temperature steady by liberal ventilation on all favourable occasions. Syringe to keep down red spider, water and mulch inside borders, also outside if the weather be dry. Be guided in the use of liquid manure by the condition of the trees. If not too vigorous and carrying heavy crops liquid manure will be necessary, yet not so much as for weakly trees, but keep it from trees that make strong wood and have a tendency to become over-luxuriant.

CUCUMBERS.—A few seeds may now be sown for late summer and early autumn fruiting. The plants from this sowing will be ready to plant out in about a month. They grow well in frames, and come in useful where plants from having been in bearing some time are exhausted. Plants in full bearing must have attention in thinning exhausted growths, removing bad foliage, stopping, tying, and regulating so as to keep up a succession of bearing wood. Add a little fresh soil to the bed from time to time, and a light mulching of stimulating material. Syringe at closing time, and maintain a moist atmosphere all day; it is infinitely better than shading. Avoid too much moisture in dull weather; it only makes the growths soft and the foliage more susceptible of injury on a bright period ensuing. Afford liquid manure copiously once or twice a week, according to circumstances. Close early, or at 85°, and so as to gain 5° to 10°, and only employ fire heat to prevent the temperature falling below 60° at night. Avoid overcropping, especially with young plants, and do not allow the fruit to hang too long, as these exhaust the plants and prevent in a great measure a good and continuous supply.

STRAWBERRIES IN POTS.—With young plants that were planted out last year there will be a good supply of vigorous runners. Some difference of opinion prevails as to the most serviceable plan of layering the runners—viz., whether it is best to do so in small pots, and when they are well rooted detach and shift into the fruiting pots, or layer at once into the pots the plants are to be fruited in. Both plans are good. In either case it is essential that the first runners, which give the best plantlets, should be selected, and that they be induced by attentive watering to fill the pots with roots, so that by after judicious attention they may develop into good plants and form well-developed crowns. If layered into the fruiting pots they need not be detached until they have become thoroughly established. Those layered in 3-inch pots should, so soon as they have filled the pots with roots, and before they become much matted around the sides, be detached and stood in a shady place for a few days preparatory to shifting them into the fruiting pots. These should be 5-inch for early forcing, and 6-inch for succession, whilst 7-inch may be employed for plants that may not be required for starting before February or March for affording late crops of larger fruit. For early forcing we find none surpass La Grosse Sucrée and Vicomtesse Héricart de Thury. The fruit of the latter is, however, small, but of excellent quality. Probably Noble will come to the front as a first early forcing variety. It was the best of any last year with us as a second early. In size it is all that could be desired. Other sorts that usually do well are Sir Joseph Paxton, Sir Charles Napier, Auguste Nicaise, and Dr. Hogg. The fruiting pots must be clean, have a large crock in each, about three or four of smaller size, and over these half-inch bones, the drainage altogether about an inch or a little more. Turfy loam, rather strong, should form the staple of the compost, laid up sufficiently to destroy the herbage, tearing or chopping up, adding a quart each of soot, dissolved bone, and wood ashes to every bushel of the loam, thoroughly incorporating. The compost should be moderately dry when used, for if wet it will shrink after potting, leaving the sides of the pot. Place the rougher parts at the bottom first, and ram it hard, potting firmly, and so that the base of the crown is about half an inch below the rim. Stand the pots on a hard base in an open sunny situation, with sufficient space between them to allow for the full exposure of the foliage. Give water as required, and sprinkle the foliage a few days after potting. When the roots are working freely in the fresh soil copious supplies of water will be needed, not allowing the foliage to flag. Remove all runners as they appear.

KITCHEN GARDEN.

PEAS.—The weather of late has been very hot and dry. Later and midseason Peas matured before they were due, nor are they juicy and as sweet as is desirable. We have done our best for them by mulching with manure and short grass, also by watering copiously every other day, which benefited them greatly. Those trying new Peas for the first time this year would do well to be careful in passing judgment on their merits, especially as to flavour, as they are deprived of this during a period of drought.

PLANTING WINTER GREENS.—Many persons who have deficient space plant their winter crops between Potato rows. We adopt the plan, but not until the stems of the Potatoes are dying. In planting now moisten the roots in a puddle, and insert firmly in the hollows

between the rows. Do not move the Potato stems more than is necessary, as by coming close up to the Greens they will afford them shade and assist their establishment.

GLOBE ARTICHOKE.—Should the heads of these be maturing more quickly than they can be used, do not allow the old ones to remain until they flower, as this will weaken the growths considerably, and may be the means of preventing another crop forming in the autumn. If they cannot be used when ready cut them off and throw them away, or ask the cook to preserve them for the winter before they have become too old.

SPRING CABBAGES.—It ought now to be decided what is to be done with the stumps from which Cabbages have been cut. Sometimes we have allowed them to remain to form side heads in the autumn, and they are very productive, but at present we have so many young plants that we are clearing off the old and planting for late autumn and winter use.

DWARF KIDNEY BEANS.—We gathered our first dish from Ne Plus Ultra in the open on June 29th, and the pods are forming freely, but we fear they, too, will mature too rapidly. When the pods become so old as to contain firm Beans the later pods will cease swelling, therefore all who wish to maintain a succession must gather the pods closely as soon as they are large enough for use. Early in the season or at present the markets are not overstocked with them, and surplus produce may be profitably disposed of.

SPINACH.—It is now difficult to get this to form large leaves, as the drought causes the plants to form seed stems prematurely. We find Spinach grows best at this season between Raspberry rows and fruit bushes, where the soil is cool and partially shaded. We also find the prickly or winter variety less influenced by the heat than the round-seeded or summer variety, and we advise those who have failed with the latter to try the former.

TURNIPS FOR WINTER.—Turnips are in daily use in the kitchen, and it is very important that there be a continuous supply of them throughout the winter. We shall now make a large sowing. Drills will be opened 15 inches apart, and if dry each will be saturated, and the seed sown immediately afterwards, covering it at once. The moisture will thus be retained, and cause rapid germination with a free first growth, which is important in Turnips. The Swedish variety, Orange Jelly, and Chirk Castle are all excellent winter sorts. The Swede may be regarded by some as being coarse, but it is very hardy, and if only grown to a garden size is extremely good.

ONIONS.—So far these are free from maggots, and there is no indication of an attack. We have not attempted to thin more of our spring Onions than have been required for use, and although rather crowded they are bulbing well. We shall not thin in the regular way now, but allow all to remain. These may be smaller than if grown 6 inches apart, but small Onions are not objected to if sound, and they invariably keep better than the large ones. We are of opinion it is now dangerous to thin Onions, as two or three instances have come under our notice of late where thinning was not done until the plants were well advanced in growth, and immediately afterwards the grub destroyed the bulk of those that were left.

THE BEE-KEEPER

NOTES ON BEES.

SUPERING.

ALTHOUGH the weather has been fine, and some of our hives increased 14 lbs. in weight on several consecutive days, I considered it injudicious to put on supers until the honey flow sets in earnest. Had I supered a week or more since they would have been tolerably well filled with combs and honey, but in an unfinished state, and if kept on till they were finished, second-class quality, almost unsaleable, would have resulted. Supers can only be obtained of first quality when they are placed on the hives and tenanted at once by the bees at the commencement of the honey flow. The bees then commence working in earnest if the weather is fine, and fill and finish supers of the very best kind. All our stock hives have sufficient honey collected to last the bees for a year, and all that is to be gathered now will be surplus, and of the finest quality, which cannot be said of those hives a half or a third less in size.

YOUNG QUEENS.

From now until the end of July is the best time to raise queens for the work of next season. The most reliable are those raised from a very populous stock, and as they creep out of their cell, or are about to do so, is the proper time to take them and place at the head of queenless nuclei formed from another stock.

I have just formed two nuclei with Pumice (?) queens at their head, kindly sent me by "A Hallamshire Bee-keeper." More lively queens I have not seen; the slightest movement of the body makes them start and try to conceal themselves. One of the queens is about the largest I have had, and if their progeny is equally vigorous we shall have very strong workers indeed.

CARNIOLIANS.

As time goes on I am still more favourably impressed with the hardiness and good working qualities of this breed. They are so docile that for twelve or thirteen years I have had them I never knew a bee to attack anyone. When crossed with other varieties, however, they use their stiletos freely; but I cannot understand why some people insist that they so closely resemble the common black variety as to be scarcely distinguishable from them. At a distance the Carniolian bee is easily distinguished from the common bee, and crosses with that variety betray their character by their less tapered body and darker colour, which any experienced bee-keeper can, at a glance, recognise. Some persons object to them because they say they are much given to swarming. They are not more liable to swarm than other varieties, and are less prone to it than some. They are lively at swarming, and refuse to settle quickly, and after swarms are sometimes more numerous than Ligurians are. This, however, is easily prevented by the timely excision of royal cells.

HINTS TO BEGINNERS.

I gather from my correspondence that there are many who are only beginning to keep bees. The first thing for them to consider is the procuring of stocks. They are advised to visit some established and well conducted apiary and there ascertain what a good stock of bees is like. Then will be the time to make the necessary purchases in bees and appliances, taking care not to procure more than may be required, nor articles which may be of no use. A hive that is to be sent home must be thoroughly ventilated. A common straw hive only requires a cheese cloth placed under the corners, tied at the top, and a cord wound round the body; the hive to be then inverted and carried by hand; or if sent it may be placed in a box having a piece of perforated zinc on the lid. If an ordinary frame hive is obtained a ventilating floor should be substituted for the common one and made secure. Whenever a hive reaches its destination give the bees their liberty; never close them in unless thoroughly ventilated, nor at any time unless for some particular purpose, which I will explain in future.

UNITING SWARMS TO STOCKS.

A Hampshire correspondent desires information on this subject, but has unfortunately omitted to state the number and kind of hives. The principal query is, "What is the best method of uniting young swarms of bees with old stocks?" To be sure of success, both lots of bees should be compelled to gorge themselves with honey or sweetened water (thin syrup), so that the bees will sip it, and not be smeared with it. The swarm should be set close to the old stock a day or so before joining. The swarm in an empty hive or box may be inverted with the bees, and the old stock set on it, when both will unite peaceably, or the swarm may be shaken on to a sheet and the stock placed over it. Two fillets of wood should be laid upon the sheet to prevent the old stock hives crushing the bees. Provided there are young queens in nuclei, or in stocks, for next year's stocks, we advise saving the old queen at present, but if not it might be the best course to kill the old queen, though we have a strong repugnance to this so long as increase of bees is wanted. Young queens in nuclei are always an insurance against loss of stock by the loss of young queens. The subject will shortly be discussed in these pages for the benefit of the inexperienced.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Seeger & Tropp, 112, Lordship Lane, East Dulwich, London.—*Interleaved Catalogue of Orchids.*



•• All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Purple Pea (A. J. S.).—The pods you send are good samples of the Purple American Pea, an old variety occasionally met with in cottage gardens.

Insects on Gloxinias (F. J.).—We have received your letter but no box containing Gloxinia leaves or insects. Very light fumigations, just sufficient to maintain a smell of tobacco in the house, should be employed early in the season to prevent the attacks of insects of the aphid tribe.

Spongy Peat (H. D. B.).—The sample sent is such as is used by Orchid growers for Cattleyas and some other kinds. It is of no use for plants generally other than those of the nature indicated. We do not prepare analysis of soils. If you do not grow Orchids you can perhaps send a sample to someone who does and ask him to try it.

Pelargonium Sport (J. G. & Co.).—The flowers have arrived quite fresh this time, and the variety which is distinct from Dr. Masters in the show decorative class, and is rich in colour with good substance of petal, appears a promising one for market and for contributing effectively to the floral display in the conservatory.

Double Begonia (W. J. M.).—The flower you send, buff tinged with rose, is very fine, and the variety, especially as the plant is a vigorous grower, worthy of preservation. We have seen some similar in shape, and not very dissimilar in colour, though perhaps not identical. This can only be determined by comparison, and you can, if you wish, send samples to the raiser of the seed, if it was purchased, or to Messrs. Cannell or Laing.

Quality of Peaches (J. V.).—We have tasted much worse fruit than those you send. Are the leaves free from red spider? These insects greatly impair the quality of fruit. Apart from that we think you are overcropping the trees, and in consequence giving stable drainings in excess, or rather continuing their application too long. They should be discontinued when the first fruits change for ripening, and a perfectly sweet atmosphere maintained.

Grapes Scalded (W. W. N.).—The berries sent are what gardeners call scalded, and very much has been published on the cause and prevention during the present season. A low night temperature, with late morning ventilation, are contributory causes, and the evil would doubtless be aggravated by drought at the roots. The temperature ought not to fall much below 65°, with a little ventilation. You have omitted to describe the treatment to which the Vines have been subjected.

Blood Manure (S. E. H.).—It is suitable for Roses and Chrysanthemums that need extra support. To plants in the open ground it may be sprinkled on the soil at the rate of between 1 or 2 ozs. to each square yard, and a pinch between your thumb and finger may be scattered on the soil in 7 or 8-inch pots. You had, however, try its strength on some grass or small weeds, and note the effects. These manures vary very considerably. They may either do good or harm, according as they are used.

Peach Trees Injured (J. W. B.).—We cannot give the "full explanation" you appear to desire, but that is scarcely our fault. The letter should have been posted a day or two sooner. We have no doubt the carbolic acid in the cesspool has done the injury, and you could do nothing better than give pure water copiously. We do not think the trees were in the best of condition before the liquid manure was given, and would therefore be the more liable to injury. We should remove half the fruit or more, then if fresh growth follows, a light crop may perhaps ripen, and if it does it will be quite safe to eat. It appears the Vines could endure what the Peach trees could not. Possibly several roots were not reached. Do not apply any more of the sewage to them.

Flowers for Sale (S. S.).—We cannot recommend salesmen through this journal, but you may write to Mr. Dickson, Central Avenue, Covent Garden, stating your object; he can, and possibly will, advise you how to proceed if you enclose a stamped directed envelope for reply. We should think it would be altogether better for you to visit the market and personally make arrangements for the disposal of your produce. You might learn a good deal that is useful by a visit to the flower market for two or three hours from its opening at about 4 A.M., and subsequently making inquiries. It is entirely different from what you call the "all-the-day-open" market, and the mornings of Tuesday, Thursday, and Saturday are perhaps the best for a visit, though we believe every morning is a "market morning" in the great building, which you have evidently not seen, at this period of the year.

Adiantum cuneatum for Market (R. S.).—This Fern is usually grown in 5 and 6-inch pots in the London Fern-growing nurseries, but some plants are shifted into larger pots. The plants occupy side beds in low houses or pits, and are stood upon ashes or some other moisture-holding material. They must have room to develop their fronds and pay very well for good cultivation. We should not expect the plants to do satisfactorily if crowded together. They can stand moderately thick, and room can be materially saved if all the old or saleable fronds are removed from the plants instead of cutting a few here and there over the whole batch of plants. The plants from which the fronds have been removed can be stood thicker together while they develop others. Those from which the fronds have not been gathered can be given more room until ready or wanted for cuttings. This Fern is improved by dividing and repotting in spring. This practice supplies a fresh medium for new roots, and they do much better again when once established. If they have been in 5-inch pots the ball should only be cut into two parts and each half potted into a 6-inch pot. Feeding is beneficial after the pots become full of roots, but we prefer some fine artificial manure such as Standen's and others to liquid for them, the former being easily applied, and acts very quickly upon the plants; this is what is wanted. A little sprinkled on the surface every three weeks after the pots are full of roots will be ample. There is another point of great importance in growing these Ferns for cutting, and that is, new stock must be raised occasionally. By continually picking the fronds from them as they are fully developed the plants in time become exhausted; in fact, they are much less vigorous, and will fail to yield the same quantity of fronds. Seedlings grow very freely, and some should be raised yearly to replace the weakened plants. If we were growing fronds for market we should always have a quantity of young plants coming forward. A large stock of plants can soon be raised by this method in constantly damp soil and a close, shaded, and moist position.

Raising Strawberries from Seeds (A. E.).—Ripe seed may be procured in two ways:—First, during the first year the plants have produced fruit, collect a sufficient quantity of well-shaped and well-ripened berries, and the best time to do this is towards the end of the full crop, that we may be sure we have got the proper sort, and that we have not gathered the seeds either from degenerated plants or from other varieties which may have intruded into the bed. Put these berries upon a plate, and set them in a dry place out of the reach of mice. They will then decompose and dry up. No danger is to be apprehended from the berries becoming putrid or mouldy, for the decomposition of the pulp tends only to perfect the seeds. The Strawberries thus dried are to be kept till the following spring, when, by rubbing them between the fingers, the seed may be easily separated from the remains of the pulp, which may be thrown away as useless, and then the seeds will remain unmixed and almost perfectly clean. Or, secondly, take the Strawberries, selected as in the former case, and squeeze them in a hair sieve of a pretty close texture; pour water upon them, shaking and separating them at the same time with the hand; press them against the sieve, and in a short time the diluted pulp will pass through and leave the seed. These may be either sown immediately, or kept in a dry place until the spring. Sowing should take place immediately the seed is obtained from the berry, and the seedlings will then bear fruit the next year. Select a light, rich soil with an easterly aspect, so as to be shaded from the mid-day sun; sow very thinly in drills 9 inches apart, and bury the seed not more than a quarter of an inch below the surface. Give gentle waterings daily during dry weather, and keep the seedlings well cleared from weeds. In August thin the plants to 6 inches apart, and those thus removed may be pricked out at similar distances in a like sheltered soil. In the early spring give them a slight top-dressing of leaf mould. Instead of sowing in the open border some gardeners prefer employing pots or seed pans, which we consider necessary where small quantities of hybridised seed are to be sown; in that case the pans should be placed in a warm aspect, and on ground where the worms cannot penetrate. If placed in a frame it will be an advantage, or a handglass, when only a single pan is sown placed over it to protect it from violent rains, as well as to forward the germination. A thin mixture of common whitening and water, and a thin coat of this laid on the inside of the handglass or frame light with a soft brush will be an effectual shade from the mid-day sun, and at the same time will admit sufficient light for the seeds to germinate and grow till they are strong enough to bear exposure to the sun and air.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds

should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. A. L.).—1, A Potentilla, perhaps Hopwoodiana; 2, Melilotus albus; 3, Aconitum Napellus; 4, Sedum ibericum; 5, Armeria maritima; 6, Veronica incana. (G. B.).—Gleditzia horrida, the "Crown of Thorns." **Cypripedium (H. T. F.).**—We have no flowers in hand for naming. Please send another specimen and we will name it if possible.

COVENT GARDEN MARKET.—JULY 10TH.

Market heavily supplied with all classes of goods. Prices with little or no alteration.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	2 0	5 0	Musbrooms, punnet	0 6	1 0
Beans, Kidney, per lb. ..	0 3	0 6	Mustard & Cress, punnet	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt. ..	8 0	9 0
Broccoli, bundle	0 0	0 0	Onions, bushel	3 0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve	0 0	0 0	Parsley, dozen bunches ..	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	" Kidney, per cwt. ..	4 0	8 0
Cauliflowers, dozen	2 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsify, bundle	1 0	1 6
Coleworts, doz. bunches ..	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 6	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	3 0	4 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 6	0 9
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2 0	to 4 0	Oranges, per 100	4 0	to 9 0
" Nova Scotia and			Peaches, dozen	3 0	12 0
" Canada, per barrel	7 0	16 0	Red Currants, per $\frac{1}{2}$ sieve	4 0	0 0
Cherries, $\frac{1}{2}$ sieve	4 0	8 0	Black	5 0	6 0
Grapes, per lb.	1 0	3 0	St. Michael Pine, each	2 0	6 0
Lemons, case	10 0	15 0	Strawberries, per lb. ..	0 3	0 9

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2 0	to 6 0	Narciss (various)	0 0	to 0 0
Asters (Fr.), per bunch ..	1 0	2 6	Pansies, dozen bunches ..	1 0	3 0
Bouvardias, bunch	0 6	1 0	Pelargoniums, 12 trusses	0 9	1 0
Cactus, dozen blooms ..	1 6	2 0	" scarlet, 12 bunches	3 0	6 0
Carnations, 12 blooms ..	1 0	2 0	Pæonies, dozen blooms ..	0 0	0 0
" 12 bunches	3 0	6 0	Pinks (various) 12 bunches	3 0	6 0
Cornflower, doz. bunches ..	1 0	4 0	Polyanthus, doz. bunches	0 0	0 0
Encabaris, dozen	2 6	5 0	Pyrothrum English White		
Gardenias, 12 blooms ..	2 0	4 0	12 blooms	0 4	0 6
Gladioli, per bunch	0 6	1 6	" English Coloured,		
Iris, dozen bunches	4 0	9 0	12 blooms	6 2	0 4
Lilac, Walte (French),			Roses, Moss, doz. bunches	6 0	12 0
per bunch	3 0	5 0	" (indoor), dozen ..	0 6	1 6
Lilium candidum, 12 blms	0 6	1 0	" Mixed, doz. bunches	3 0	6 0
12 bunches 12 0	24 0		" Red, dozen bunches	4 0	9 0
Lilium longiflorum, 12			" 12 blooms	1 0	2 0
blooms	2 0	5 0	" Tea, white, dozen ..	1 0	3 0
Lapageria, 12 blooms ..	1 0	2 6	" Yellow	2 0	6 0
Maldeuhair Fern, doz.			Spiraea, dozen bunches ..	4 0	8 0
bunches	4 0	9 0	Stephanotis, doz. sprays	2 0	3 0
Marguerites, 12 bunches	2 0	6 0	Stocks, dozen bunches ..	3 0	6 0
Mignonette, 12 bunches	8 0	6 0	Sweet Peas, doz. bunches	3 0	6 0
Myosotis or Forget-me-nots			Sweet Sultan,	4 0	6 0
doz. bunches 1 6	4 0		Tuberose, 12 blooms ..	0 6	1 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6 0	to 12 0	Fuchsia, per dozen	4 0	to 9 0
Arum Lilies, per dozen ..	9 0	12 0	Geraniums, Ivy, doz. ..	3 0	5 0
Arborvitæ (golden), dozen	12 0	24 0	Hydrangea, per dozen ..	9 0	18 0
Asters, 12 pots	0 0	0 0	Lobelias, per dozen	3 0	6 0
Begonias, various, per doz.	4 0	12 0	Marguerite Daisy, dozen	6 0	12 0
Caladiums, per doz. ..	9 0	18 0	Mignonette, per dozen ..	3 0	6 0
Calceolarias, per dozen ..	4 0	8 0	Musk, per dozen	2 0	4 0
" Herbaceous	6 0	12 0	Myrtles, dozen	6 0	12 0
Christmas Rose	0 0	0 0	Nasturtiums, per dozen ..	2 6	4 0
Cineraria, per dozen ..	0 0	0 0	Palms, in var., each ..	2 6	21 0
Dracæna terminalis, doz.	24 0	42 0	Pelargoniums, scarlet, 12	2 6	6 0
Dracæna viridis, doz. ..	12 0	24 0	Pelargoniums, per dozen	6 0	18 0
Erica Cavendish, doz. ..	0 0	0 0	Rhodantha, per dozen ..	6 0	9 0
" various, doz.	12 0	24 0	Saxafraga pyramidalis,		
Eucynymus, var., dozen	6 0	18 0	per dozen	9 0	18 0
Evergreens, in var., dozen	6 0	24 0	Spiraea, per dozen	6 0	12 0
Ferns, in variety, dozen	4 0	18 0	" palmata, per doz.	12 0	24 0
Ficus elastica, each ..	1 6	7 0	Stocks, per dozen	3 0	4 0
Foliage plants, var., each	2 0	10 0			



PASTURE FARMING.

PROFITABLE economy is a definition of modern farming that is singularly expressive of the spirit that should govern all practice,

and of the test to be applied to all attempts at improvement. It is a safeguard both against extravagance and parsimony, and points to the happy mean that spends wisely and saves wisely. The term really implies profitable expenditure and the avoidance of wasteful outlay, or the culture of any crop, the rearing of any animal upon which a fair profit is not tolerably well assured. Anything like precision in farming is impossible, our best efforts often falling short of the success they deserve through causes beyond our control, and we certainly do well to avoid all such risk of failure so far as we can.

As a means to this end it appears highly desirable that much more attention should be given to pasture farming than it has hitherto received. It is a question for the consideration of every farmer, if it is not in his power to avoid altogether the cultivation of root crops. They are proverbially uncertain, are very much the sport of seasons, are certainly very costly, and are by no means so indispensable as is generally supposed, and we hope that as greater attention is given to the cultivation of pasture it will be found that forage in one form or other is a suitable substitute for roots. On many—on most farms—roots are now thought to be indispensable. Why? If only for the nutriment they contain, then certainly fair comparison is much in favour of forage. Take the test of analysis, and we find Mangold roots are composed of water, 88.0; albuminoids, 1.1; fats, 0.1; carbo-hydrates, 9.1; ash, 0.8. Swedes have of water 89.4; albuminoids, 1.4; fats, 0.2; carbo-hydrates, 7.1; ash, 0.6. Yellow Turnips—water, 90.5; albuminoids, 1.4; fats, 0.2; carbo-hydrates, 5.8; ash, 1.0. White Turnips—water, 92.0; albuminoids, 1.0; fats, 0.1; carbo-hydrates, 5.2; ash, 0.6. Compare with these an analysis of grass silage, and we have water, 73.530; albuminoids, 2.305; carbo-hydrates, 11.605; woody fibre, 8.140; ash, 3.920, which shows a balance of nutriment much in favour of the silage, and it is very much more in favour of hay and Oat or Barley straw. As an example of how such analyses are turned to practical account, take an ordinary full-grown healthy dairy cow. We know that its food should contain in, say, 25 lbs. of dry matter daily, 2.5 lbs. of digestible albuminoids, 0.4 of fat, and 12.5 of carbo-hydrates, and it is certainly our concern to impart such nourishment in the most economical manner. In summer, with plenty of rich pasture, cows become sleek, and the yield of milk is rich, abundant, and well sustained. Here is an analysis of such pasture:—Water, 78.2; albuminoids, 4.4; fats, 0.4; carbo-hydrates, 10.4; ash, 2.2; which shows at a glance why cows and other grazing animals thrive so well upon it.

We may remind our readers that the literal meaning of science is exact knowledge, and that the formation of permanent or temporary pasture has become a scientific matter of much importance. The preparation of the soil, the selection and sowing of the seed, and the subsequent cultivation have all been thoroughly digested, so that there can be no good reason now for negligence or slovenly practice. Why, indeed, should there ever have been in this matter? It is true that accurate knowledge of the comparative value of forage plants is of recent date, but have even indigenous grasses and Clovers had fair play? Take the majority of old permanent pastures now, and do we not find them infested with weeds, low in fertility, and often deficient in drainage? How anyone paying rent for land can allow it to remain so neglected passes our comprehension. Ignorance? surely not, for if a farmer knows anything of his calling, he knows a weed when he sees it, and knows also whether land is fertile or not. It is true that he may be ignorant of the best way of storing the soil with fertility, of the relative value of forage plants, of the theory and practice of drainage, but he has no excuse for remaining so.

For tenant farmers especially temporary pasture of from three to five years answers best, for if sown down well in carefully prepared soil and fertility sustained full crops are a certainty. Once get the system established upon a farm in conjunction with ensilage, and down goes the labour account, while profits mount up in the most certain and delightful manner. The cost per acre

of a root crop cannot well be calculated at less than £6, and then there is the risk of failure which cannot be ignored. To be able to avoid such outlay and risk is very desirable, and the question of roots *versus* forage is worthy of earnest, thoughtful consideration. Why is it that we find one farmer giving up farm after farm, and another taking them in hand? Is it not because the one clings with stolid persistence to old habits and old cultural practices, while the other is alert and prompt to seize and turn to account every real improvement in practice? No doubt farmers have been pestered with much vexatious advice from well intentioned theorists. But while we ignore fanciful theory, let us strive for an intelligent appreciation of all real progress, and by striving to apply all possible improvement in practice, not only derive due benefit from it, but also show how sensible we are that while the British farmer may be the best in the world, even he still falls far below perfection in his practice.

WORK ON THE HOME FARM.

Now that flies are in full force and are so troublesome to cattle, cows should be put in a cool lodge or cow house during the hottest part of the day, and have as much green food as they require in rack or manger. If left to seek shelter themselves they will run into a lodge or among coppice wood if they can, and remain there for hours without food, and so cause a falling off in the yield of milk. Now above all things this should be prevented by a little extra attention, and it should not be forgotten how much a little dry food at milking time contributes to both the quality and quantity of the milk. We gave particulars of such food a few weeks ago, and repeat them now when they are most wanted. Give 3 lbs. twice daily of a mixture of equal parts of bran, crushed oats, decorticated cotton cake, and Smith's palm nut meal. This mixture so given in addition to a full supply of green food was found last summer to bring up the butter yield per cow to more than double the ordinary quantity.

As the lambs were withdrawn from the ewes they were put into folds on Sainfoin and mixed layers, and let out for a change on grass for a few hours daily. Under such treatment they thrive much better than they would if turned out altogether on pasture. For new permanent pasture sown this spring without a corn crop nothing answers better than lamb folding repeatedly as each growth becomes ready, the object being to prevent seeding and to enrich the soil. The folds are made so small as to ensure a speedy consumption of herbage without harm to the young plant. All sheep and lambs should now be dipped in Cooper's mixture as a preventive against fly attacks and to destroy all insects in the wool. If lambs are required for early hoggets continue giving a full supply of Mackinder's lamb food or crushed Waterloo cake, which is a compound of nutritious food very suitable for them; but if they are for stores or late hoggets next spring they require very little trough food till autumn. Select and mark a certain number of the best ewe lambs for the ewe flock. By doing this annually the flock number is well sustained, and it always answers best to do this with home-bred rather than with purchased sheep, for no man parts with his best ewes if he can avoid it. All over-age ewes should be taken out of the flock and fattened for sale; barrens and all doubtful or faulty animals should be included in this draught.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1889. June and July.		Barometer at Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	30	30.311	67.9	58.8	N.	65.1	78.2	57.3	119.0	52.1	—	
Monday	1	30.392	63.9	57.1	N.	65.9	73.9	53.7	126.3	49.3	—	
Tuesday	2	30.395	61.8	54.6	E.	65.9	69.1	56.9	110.9	55.5	—	
Wednesday	3	31.2.8	59.6	51.3	N.	64.8	64.0	53.4	86.2	47.8	—	
Thursday	4	30.174	62.4	57.4	N.E.	63.9	74.8	55.6	117.4	55.8	—	
Friday	5	30.183	65.9	60.1	N.E.	64.3	80.9	51.9	122.4	51.9	—	
Saturday	6	30.110	69.0	58.2	N.	65.4	79.7	50.9	120.2	44.2	—	
		30.263	64.4	57.2		65.0	74.6	54.7	114.6	51.2	—	

REMARKS.

30th.—Bright and fine; a little cloudy in evening.
 July 1st.—Fine bright morning; generally cloudy in the afternoon and evening.
 2nd.—Cloudy morning; a little sun in the afternoon; bright evening; cool throughout.
 3rd.—Cloudy and cool.
 4th.—Cloudy morning; bright afternoon.
 5th.—Bright and warm.
 6th.—Bright and warm.
 The third successive rainless week. It is very unusual to have three—but barometer falling and every prospect of rain. Temperature very similar to the previous week—
 G. J. SYMONS.



THE CONSERVATORY IN SUMMER.

THE conservatory usually loses much of the charm in summer that it possesses during the autumn, winter, and spring months. These structures are often not regarded with the same admiration in the summer on account of the great similarity between the flowers and plants employed and those outside, but this need not, and should not, be the case. Forethought is needed in rendering conservatories attractive in summer, as greenhouse flowering plants are somewhat limited in number when those that are doing duty in the garden are deducted. The object in view may, however, be readily accomplished if such plants as Zonal Pelargoniums, Fuchsias, and others are not employed after they commence flowering outside, or only sparingly, as may be necessary to impart colour and variety.

Well-grown French and Fancy Pelargoniums are distinctly attractive, and their flowering period can be prolonged by having a number of plants rooted during April and May. If the pinching of the shoots is discontinued at the end of August these plants will flower early in summer, and others rooted in the spring from young growing shoots continue the display until the end of August or middle of September.

Ivy-leaved Pelargoniums, of which so many beautiful double and single varieties have been raised during recent years, are admirably suited for conservatory decoration, their elegant appearance and charming colours being much enjoyed. No doubt these plants can be grown in the open air, but they cannot there be represented in the best condition, and they are worthy of good positions under glass. Well grown plants are highly attractive.

Liliums are invaluable—indeed, indispensable—until they commence unfolding their flowers in outside beds and borders, and even subsequently good plants and varieties are admissible in the conservatory. I need not, however, stay to enumerate plants which flower in the open air, but propose directing attention to others that are suitable for the purpose in question.

Achimenes are decidedly attractive in appearance in pans and pots, and there need be no scarcity of these plants from June until October if they are prepared successionally by inserting cuttings thickly at intervals of a few weeks. It is necessary to select free and continuous flowering varieties. Gloxinias may be employed with advantage in conservatories, but the plants must not be removed direct there from close moist highly heated stoves, but must be prepared for the positions they are to occupy by being started somewhat late and brought forward gradually. Plants thus prepared produce stout flowers on sufficiently strong stems for dispensing with the aid of stakes. Both Gloxinias and Achimenes last longer and are more attractive under the cool treatment of the conservatory than in the close, moist atmosphere of the stove.

Allamandas, Bougainvilleas, and Clerodendrons are at home in conservatories in summer, provided the plants are watered with care and not exposed directly to draughts. Large balloon-shaped specimens that are admired in exhibition tents are, with few exceptions, useless for the purpose under notice. They are too formal for grouping effectively with plants of a totally different nature. Plants in from 7 to 10-inch pots loosely trained round four or five stakes are the best for our purpose. Prepared on the pot Vine principle, and well ripened by being trained under the roof the first season of growth, we have found them most suitable. The

two former answer best when transferred from 5 or 6-inch pots in which they have been started the first season to their flowering pots, and well grown the second year. They can be prepared in a season, and small well flowered plants are appropriate for certain positions. *Clerodendron fallax* can be raised from seed sown early in the year, and the large trusses of flowers impart brightness without "commonness" to any structure in which the plants are arranged. Cuttings of *C. Balfourianum* rooted early and the plants well grown in 6 and 7-inch pots are large enough for conservatory decoration. Finishing as they do their growth late in the year they require very little retarding to insure their flowering at the proper time.

Begonias of nearly every section are invaluable, but unfortunately these are not employed in the conservatory during the summer to the extent that they deserve. Persons who know their value and grow the plants well do not fail to provide a sufficient number for decoration at this period of the year; but all the same, there is ample room for thousands more to be cultivated for the purpose in question.

We have frequently arranged for a time early-flowering Tydeas, *Ixoras*, and other stove-flowering plants without the least sign of harm having been done to them, though even the few that have been enumerated, if employed in sufficient numbers, give a totally different aspect to many conservatories than they frequently possess during the summer months.

In lofty structures *Campanula pyramidalis*, well grown, is highly effective, forming spire-like masses of flowers 6 to 9 feet high. They associate well with other plants, imparting diversity with agreeable colour to the arrangement.

Kalosanthes are quite distinct from outdoor flowering plants, and are rich without being gaudy. They can be flowered in quite a small state if needed for certain positions, and show to advantage with Ferns and Gloxinias.

Among annuals well-grown plants of *Gomphrena globosa* are distinct from any in open borders. *Salpiglossis* attract by their richly pencilled flowers, *Rhodanthes* by their chaste colours, and *Thunbergia alata* produces a good effect in appropriate positions.

But for the summer decoration of the conservatory we need not confine ourselves to flowering plants, for ornamental foliage plants are equally suitable and impart a tropical aspect to the arrangement, which is enjoyable. Few plants associate with flowers better or produce a more elegant appearance than *Adiantum cuneatum*. If some are grown under the influence of more light than the others two distinct effects can be clearly brought out. Those grown with abundance of light will have fronds of the lightest green, or nearly yellow, tinted with pink; while those grown in the shade will be of the deepest and most pleasing shade of green.

The number of suitable plants is by no means exhausted. *Aralias*, or most of them, would be better in the conservatory than in the stove; in the latter they soon grow too tall, while in the former they make compact growth, and are in the best possible condition for any other form of decoration during the following autumn, winter, and spring. Small well coloured plants of *Pandanus Veitchii* are very effective, so also are well developed examples of *Dracenas Lindeni*, *Cooperi*, *terminalis*, and *gracilis*. These and other stove plants, such as variegated grasses, *Acalyphas* and others, change the aspect of the conservatory in summer, and notwithstanding the wealth of flowers outside do not fail to give satisfaction.

Crotons, well coloured, of any section, whether broad or narrow leaved, have few equals for ornamental purposes. Poorly grown plants inferior in colour detract from, rather than add to, the effect of an arrangement, and should not be used. We often see these plants employed with magnificent effect in the exhibition tent, yet seldom find them equally good in conservatories and similar structures during the summer. Improvement in the arrangement of plants for effect has been apparent in exhibition groups, but these

have not produced the practical results we had hoped for. We trust, however, that in the near future the conservatory ornamentation will be improved correspondingly during the warmest months of the year.—W.M. BARDNEY.

CANKER IN FRUIT TREES—THE INSECT THEORY.

I DO not know whether Mr. J. Hiam (page 6) wishes me to demolish his insect theory or not. It would almost be a pity to do so if I could, as it would deprive him of a subject evidently of great interest to him, and naturally so, as its discoverer. I like to see a man adhere to his convictions as long as he can, and to abandon positions that he finds untenable. This indicates firmness of character with prudence—an undeniably excellent combination.

When Mr. Hiam tells us he has been obliged to give up the idea that his insects only attack certain sorts, or "those they like best," I suspect he nearly throws away his case. If they do not attack those they "like best" they must devote their attention to others which are less palatable, and that is scarcely in accordance with the economy of existence. By the admission I think he must lose his only supporter, Mr. Harrison Weir. I remember having a pleasant conversation with this gentleman on the subject in question; he based his argument in support of the insect theory on the very point which Mr. Hiam says he has "had to give up." I do not expect, however, that Mr. Weir will thus capitulate. I have been careful not to deny the possibility of some insect puncturing the branch of an Apple tree and causing injury that may develop into a wound; but I believe the insect has yet to be discovered that causes canker. Mr. Weir had not seen it at the time of our conversation, and I feel certain such a good naturalist as he is would not admit that the insects Mr. Hiam finds so plentifully in cankered wood, and which anyone may find with the aid of a good magnifying glass, are the cause of the canker.

I happen to have had the opportunity of examining insects from Mr. Hiam's trees, not through a magnifying glass alone, but under the microscope, and they were precisely the same as those I have seen in decaying wood any time the last forty years. Some of the same insects were in the cankered wound on the specimen figured (page 434, May 30th), and they were the consequence and not the cause of the canker. Unless Mr. Hiam has another kind than those I have seen in wood from his garden I am bound to express my conviction that his theory breaks down. He will not agree. May I suggest, then, that he forward samples to the Scientific Committee of the Royal Horticultural Society for examination by its experts? In my belief the insects to which I refer from Mr. Hiam's trees could not live on the smooth wood of the Apple; and without the least hesitation I would place a hundred of them on the choicest tree in my garden. They might find their way to the rougher bark and there live, but I am convinced they are without the means of puncturing smooth, healthy wood.

Clearly they do no harm in cankered crevices when the wounds are healing as in the Impney specimen, for if they did the wounds would not heal. It would be quite as reasonable to say they were the cause of the healing as the cause of the disease.

Mr. Hiam says the insects "move from the healing parts and take up a fresh abode and produce canker." If that is so we might expect them to move to another branch of the same tree as more convenient than making a long journey in search of a variety they do not like, as Mr. Hiam says they do not choose sorts "they like best." I do not think he lives very far from Impney, and I am sure if he can call there Mr. Parker will show him the branch from which the cankered part above referred to was cut, and I think he will have some difficulty in finding a speck of canker on the tree or any others near it. In my experience the insects do not move very readily from their old abodes; it is in fact about as difficult to drive them away as it is to drive a lot of hungry pigs from a trough in which food is placed. I was so well aware of this that I took no precautions to preserve them in the canker-healing cavity. The branch was passed to and fro, was examined by Mr. Tonks, carried loosely about, brought to London, and all the time they stuck to their cabin with the tenacity of a Tipperary man.

Further, if they cause canker then move and take up a fresh abode to produce more, whither can the millions have gone that according to Mr. Hiam's theory must have been at work in Mr. Tonks' garden? There are thousands of healing wounds there since the soil was improved and supplied with the essentials for producing healthier growth, and no fresh wounds are visible. The insect theory entirely breaks down as applied there.

Mr. Hiam's experience in establishing healthy growths by grafting on cankered stocks is not evidence that insects caused the canker, because the results would in all probability have been the same if he had not limewashed and insecticided the stocks and scions. Thousands of cases prove this, and not many more conclusively than the trees in Mr. Garrod's garden at Ipswich, the originators of the discussion on the whole subject. If Mr. Hiam had cured his cankered Hawthorn den by painting alone, he would be in a much stronger position. I have tried my best to cure a favourite tree of that variety, and no doubt destroyed every insect on it, but that did not suffice. The nuts I presented will not, I think, be cracked by insects.

In respect to the frost, if Mr. Hiam reads what I wrote on the page above quoted with the care that is requisite for the purposes of effective criticism, he will find that I did not attribute canker to frost solely,

though I have no doubt it has a much larger share in producing it than insects have, and the healthier the growth the less liable it is to injury. His six-years-grafted Dumelow's Seedling was in a condition to resist the action of frost during the comparatively mild winters in Worcestershire during the past few years. If he had practised in the north for five times that period, and noted the the disastrous effects of frost on trees when the thermometer falls below zero, he would be bound to admit its canker-producing power, though the results are not apparent the first year, except to persons who are familiar with the affection in its early stages.

In respect to Mr. Hiam's facetiousness over Dr. Hogg's trees, I can assure him the one that has so far escaped was not "wrapped up;" therefore, according to his theory, it ought to have been attacked by insects the same as the other two. When canker affects the main stem of one tree and another by its side escapes, and the stocks have been raised from the pips of different varieties of cider Apples, as is customary, there are varietal differences, and it would be a wonder if all of them were equally hardy, and as hardy, as I said before, as stocks of the genuine Crab. If Mr. Hiam has ever had a chilblain on one of his fingers, it does not follow that all other parts of his hand were "wrapped up," nor if frost has bitten one of his toes that it crept in through a hole in his stocking. If he can prove that it has his wrapping-up observation will have force, not otherwise.—W.

POPPIES.

POPPIES are most interesting in their forms and colours, easy to grow, and do not require much space or attention. They are effective in a cut state either in large masses by themselves or with other flowers. The most beautiful are those known by the name of the "Shirley" Poppies, raised by the Rev. W. Wilks of Shirley Vicarage, Croydon, who has obtained a diversity of colours without the black spot at the base of each petal. Amongst many seedlings I fail to find two flowers alike; they range in colour from a brilliant scarlet to the faintest blush and pure white. The soft forms of rose and pink are exquisite. Some red varieties have a pure white edge, and others graduate from a deep rose to a faint pink, while those which are characterised by blotches on the petals are not the least showy. All possess that rounded form so much admired, the petals being entirely free from serration. In no way in a cut state do they show to the same advantage as when arranged in a tall glass of any shape. The base should have a setting of foliage which will hang over the sides of the glass, then place the Poppies in lightly with long stems, associate with them a few long feathery Grasses, and nothing more is needed to set them off. I find they are best cut when the flowers are fully expanded; the stems are then more firm and matured, while the petals are fully developed. In this manner they last from twenty-four to thirty-six hours in good condition. If they are cut too early and before the stems are hardened they droop directly. When cutting the blooms have a vessel containing water alongside, place the stem into the water immediately, which prevents the end being sealed over by the milky sap exuding; in this manner they are able to absorb more moisture, and consequently last a longer time.

The best mode of cultivating these Poppies is by making three sowings in the place where they are to flower, as they cannot be transplanted readily, especially if the weather be hot and dry. If of necessity any plants are treated in this manner with a view to fill gaps in the rows or beds, cover the plants with an inverted pot during the bright part of the day. Transplant them in a young state, and in showery weather if possible. Make the first sowing in October, choosing a warm sheltered position. Plants from this sowing will flower at the end of May. The second sowing should be made the first week in March to flower the middle of June, while a later sowing may be made about the middle of April, when a continuance of bloom may be assured. I sow them in different positions, such as in the herbaceous and Rose borders, in a bed on an east border, and another one on a warm south border which slopes towards the path. I sow the seed thinly, as sowing too thickly necessitates severe thinning of the plants, and if this is not done freely they become drawn. They should not be less than 6 inches apart all ways, and if a trifle more all the better.

Papaver orientale is the next in importance to the Shirley strain, this being a very hardy perennial, which is increased freely by dividing the roots. The foliage is deeply cut, of a dark green colour. The flowers are 6 inches across or more, and are produced on stout stems 3 to 4 feet high during May and June, the colour being a showy scarlet, with a black spot at the base of the petals. In the herbaceous or shrubby borders, backed up with other greenery, they show to advantage, and being a perennial this Poppy is all the more valuable.

The Iceland Poppies (*Papaver nudicaule*) are charming plants, and being of dwarf habit they can be used in a variety of positions. We have them in rows, the yellow and white colours alternately planted. In mixed borders of summer flowering plants, such as scarlet

Pelargoniums and dark Violas, these free-flowering dwarf Poppies are much appreciated, as they make such a pleasing contrast in the colour and form of their blossoms. In the front of the herbaceous borders, and in the most suitable places on the rockery, such as where the soil is deep, these Poppies flourish, commencing to flower early in May, continuing through the summer. Sow seed in gentle heat early in March, pricking the plants out in a cold frame when strong enough, afterwards planting them out finally towards the end of May, when they will commence flowering almost directly. In most instances, unless the position be a wet one, this section of Poppies will stand the winter and flower more freely the following season. Of the three colours perhaps the orange one is the most appreciated; although the white is pure and the yellow most free in flowering, there is a charm about the orange variety which cannot be denied. For cutting purposes this section is invaluable.—M. S.



ORCHID NOTES.

CYPRIPEDIUMS.

I MUST confess to a great liking for Cyripediums. They are remarkably distinct, and there is much that is attractive about them. They also possess the great merit of being serviceable. Theirs is not a fleeting visit, but we have them with us for many weeks or months, and I never tire of them. There are species and varieties for every month of the year, and a collection therefore would always prove interesting to its fortunate owner, and at times could not fail to prove attractive to less interested persons. Some of the species and varieties are rare and valuable, so that there is plenty of scope for the indulgence or fascination of possessing something that everybody else cannot possibly expect to obtain for many years to come.

Without attempting to enumerate all worthy of general culture, or to minutely describe any of them, I shall yet venture to name a few that would succeed almost anywhere, or at any rate where there are facilities for growing other heat-loving plants, giving them somewhat in their order of flowering. For midwinter there is none to excel, or even equal, the good old *C. insigne*, and of this there are several superior forms, including *Maulei* and *punctatum violaceum*. These will succeed under greenhouse culture, but thrive far better when kept in a brisk moist heat till the young growths are well developed, or say to the end of June, after which they ought to be transferred to cold frames and shaded from bright sunshine till the autumn, being returned to gentle heat or a warm greenhouse to unfold the already well-advanced flowers. If kept in strong heat all the year they are liable to do little else but grow strongly, while if given no heat beyond what is necessary to exclude frost the growth is frequently weakly and unhealthy. It is really surprising what a great demand exists for this old favourite, and those who have more plants than they need will experience no difficulty in exchanging them for other Orchids.

C. venustum and *C. Boxalli* also flower during the winter and early spring months; both possess strong constitutions, and never fail to flower freely in a moderately warm house, in which they are grown. Ours are always in a mixed fernery, and are but little trouble. In March, and until the end of July, *C. barbatum* and varieties are available. Especially good are *C. barbatum nigrum* and *superbum*, and whether as single pieces or in large made-up pans they are most effective and durable. They ought never to be out of a moderately warm house for many weeks together.

C. Sedeni and *C. Argus* are also spring-flowering forms, and of easy culture. *C. Lawrenceianum*, with its prettily yellow variegated leaves, flowers in the summer, and is useful for exhibition purposes from May to August. The flowers resemble those of the *C. barbatum* type, and the plants require similar treatment to that species. *C. caudatum* is remarkably distinct, the "tails" of the flowers sometimes attaining a length of 2 feet. It evidently delights in plenty of heat and moisture, and flowers freely in May, June, and sometimes as late as July. This, and the variety raised from it—*C. Dominianum*, ought to be in every collection. The last-named

is the most free-flowering, but the flowers are smaller and the tails shorter.

C. Lowianum, *C. lævigatum*, *C. Stoneanum*, and *C. Harrisianum* are good summer-flowering species. Autumn bloomers are not very numerous, but comprise a few gems, notably the charming *C. Spicerianum*. This lovely species has nearly pure white flowers, and thrives admirably in a brisk stove heat. The pretty little *C. niveum*, though far from being robust, also does well under similar treatment, and this flowers in November and December. *C. concolor* has mottled foliage, and white prettily spotted flowers, quite small plants producing these during the winter. *C. bellatulum*, previously noted in these pages, is a grand addition to the *C. Godefroyæ* section.

Cypripediums generally are best kept in ordinary freely drained pots, and a compost consisting of fibrous peat with charcoal, sphagnum moss, and sand freely added suits them. Too often they are found in a mass of sour close compost, in which they keep alive a surprisingly long time, but only present a very unhappy appearance. They are worthy of better treatment, and ought therefore to be at once turned out of the pots and the roots washed clear of the sour soil. After all the dead parts have been cleanly cut away repot in quite fresh compost, using as small pots as they can conveniently be placed in, and water carefully till fresh roots are in full possession. It is a mistake to be always pulling Cypripediums to pieces and repotting, this greatly interfering with the flowering; but it does crowded clumps of the commoner species good to be divided occasionally, the fresh pans formed soon filling up, and finer flowers are the result.

As far as heat and shade are concerned, what suits most heat-loving Ferns also agrees with Cypripediums. Those well established should, when growing strongly, receive abundance of water, much less being naturally required during the duller months of the year, but at no time should they become dust-dry at the roots. A little clear soot water or weak liquid manure may well be given to the strong well-rooted plants, and a top-dressing of either peat or very fibrous loam benefits the *C. insigne* type especially.—I. M. H.

ONCIDIUM CRISPUM GRANDIFLORUM.

At the meeting of the Royal Horticultural Society's Orchid Committee at Chiswick last week Mr. J. Charlesworth, Heaton,

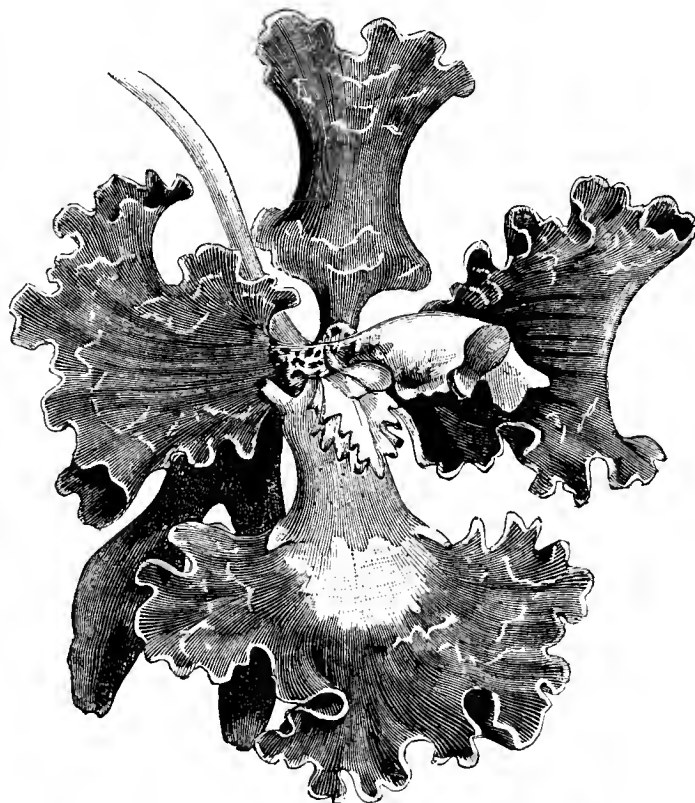


FIG. 5.—ONCIDIUM CRISPUM GRANDIFLORUM.

Bradford, sent six remarkably vigorous panicles of *Oncidium crispum* bearing the name *grandiflorum*. The flowers were of great size (over 3 inches in diameter), the sepals and petals deep brown with some yellow markings, the base of the lip having a broad rich yellow band. It is evident that the plants must have been grown very strongly, and the cultural commendation re-

commended by some members of the Committee would have been a suitable recognition of this fact; but as it appeared that the variety had been cultivated for some years and maintained its character a first-class certificate was awarded. Exhibitors of novelties or rarities too seldom furnish any particulars concerning the plants they send to the Committee, and it is a great mistake, for often some reliable information would influence an award favourably. *Oncidium crispum* is known to be a useful Orchid, and the variety represented in fig. 5 is one of the best that we have seen.

CUCUMBER ENEMIES.

It is not my purpose to treat of the culture of the Cucumber in general, but I would state in passing that an average atmospheric temperature of 70°, with a fair portion of moisture in it, and a rise from sunshine of from 10° to 15° more, with a fair portion of air, at least during the day, and a bottom heat from 75° to 85° will, with the assistance of rich light soil, grow all the finer kinds of Cucumbers. Those that produce fruit short and stubby will thrive in a temperature from 5° to 10° lower. It may also be added that however grown, whether in house, pit, or frame, the plants will be easier kept clean if trained on a trellis instead of being pegged along the ground, and another inducement for this treatment is that the fruit not only look better when hanging than when lying, but it is green all round instead of being pale on one side. The only disadvantage against the hanging process that I know of is that the neck of the Cucumber is thus made longer; but even here, when a short neck is extra desirable, the Cucumber may easily be placed in a glass case, and slung in a horizontal position.

The first enemy to which I will allude is the aphid or green fly. It is wonderful what a number of them will congregate in a short time on the under side of a leaf if permitted. Allow them to remain on a leaf several days, and the health of that leaf is gone. Allow them undisputed sway over a plant for a week, and unless the roots are extra strong it is next to impossible to restore the plant to health. After trying many things I still prefer tobacco smoke for ridding us of these pests. Here, as well as in all matters relating to the destruction of insects, the old adage holds good, "He gives twice who gives quickly." Use the strongest black shag tobacco, and fill the house with cool smoke whenever you see the first fly. You may depend on it that there are others at no great distance. Delay the operation for a few days and you will have another brood, and hosts of eggs deposited ready for the hatching. If taken in time a second application after a day or two may catch up all those sick but not killed, and those young ones that have just emerged from their shell. These young ones require less strength of tobacco than the older ones. Perform the operation in the evening. Let the leaves be rather dry, and shade from sun the following day. Whatever the mode of smoking see that the smoke is cool.

The second enemy is the red spider. This, though so small as to require a sharp eye to distinguish, is much more destructive than the aphid, and tobacco will by no means smoke him away. The fumes of sulphur, obtained by placing flowers of sulphur in a moist state over a hot-water plate, pipe, or lid of a kettle, the water being heated to from 170° to 180°, is sometimes useful in conjunction with a free use of the syringe. It is, however, difficult to eradicate when once it obtains possession. Prevention is, therefore, better than cure. A damp atmosphere is inimical to this pest, as well as animal life in general. A free use of the syringe when closing in an afternoon is what this intruder will not willingly endure. If, in addition to this, the walls of the house, the back of the frame or pit where the sun strikes rather powerfully, are painted with one part lime and two parts sulphur, and moisture in the atmosphere is maintained, there will be no inducement for this intruder to seek lodgings there. If a few leaves are affected the sooner they are cut off and burnt the better, as if in a vigorous state a Cucumber plant will soon make fresh foliage.

The thrips is even more difficult to eradicate than the spider. Many speak of conquering them with tobacco. I cannot say that I ever succeeded in destroying the enemy before I had also destroyed his feeding ground. Perhaps, however, I did not persevere enough. There is little difficulty in keeping it down when the plants are grown in a house, or so suspended that you can get underneath them. I have known many cases in which the plants were next to destroyed, and yet the owners could not divine what could be the reason. Though the insects are several times the length of a red spider, they are very slim in the body, yet can easily be detected by their jumping on the under side of a leaf. The leaf, though it presents a little of the yellow dotted appearance, the result of the visit of the red spider, has also on its under side a shining glazed appearance, something as if a snail had left its trail there, but on examining it you find this is the consequence of nothing left, but of the juice that has been removed. I have said they may easily be kept down in a house where we can examine and see the under side of the leaves, as the thrips generally select the under side of the oldest finest foliage, and from thence can be dashed with the syringe, or if very bad the leaves may be removed and burned. Various ingredients may be mixed with the water used in syringing. I have found a decoction of Laurel water useful, made by taking as many of the young shoots of the Laurel as, when the leaves were cut in small pieces or bruised with a mallet, would fill firmly a quart pot, placing them in a jar or watering pot, pouring boiling water over them, and allowing to soak for an hour to get good

strong tea from them, and then adding enough water to make from three to four gallons. This, in the circumstances, I have found the most effectual remedy.

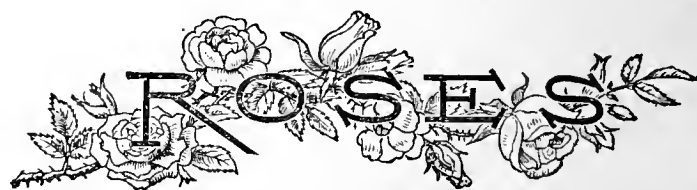
As the insects congregate on the under side of the leaf, they cannot easily be reached in beds and pits. Here a few of the worst leaves should be removed, and the plants and walls be well syringed with the Laurel and lime and sulphur water, trying every dodge for getting the water thrown on the under side of the leaves. A smoking with tobacco will do no harm. I have found it more efficacious when a handful of bruised Laurel leaves was placed over the tobacco in rather a moist state, but care must be taken not to burn them much or you may give too strong a dose, and if very particular about your paint and there is much moisture about the house you may have something like a prussiate of lead deposited on it, which will, however, go off by exposure. I have also, in extreme cases, cleared this and every other insect out of frames by placing a quantity of bruised Laurel leaves inside of them. But it is necessary to act with caution, as too large and long-continued a dose will kill the plants as well. A bushel of leaves thus cut and bruised might be placed in a three-light box or pit, but it should not be kept shut for much more than an hour. There is so much more poisonous acid in the leaves at one time than another that if this mode is adopted it should only be referred to in extreme cases, and that with the precaution of making the dose weak enough at first.

I need not say that though these pests are great enemies to the Cucumber, similar modes of eradicating them may be resorted to in the case of other plants affected, bearing in mind that weaker doses must be applied to tender plants, and especially when the foliage is in a young succulent state.

Woodlice.—The destruction of these has frequently been referred to. There are various methods of catching them, and the following is good.

Take a few small bellglasses clean washed inside with such a bait as a slice of Potato, Turnip, or fresh crisp Lettuce leaf in its centre, and plunge it in the bed, so that its edges are level with or rather below the surface of the soil. They can get in easily enough but cannot get out again. Their feet can do nothing in the upright clean glass, and such glasses I have frequently had half filled.

Snails and slugs often do much injury by nipping the young fruit and eating the leaves. They are often introduced in a young state with the soil. A little quicklime mixed with it some time before using and turning several times is a good preventive. The only objection to the use of road-drift and the sand and sandy soil obtained from the sides of roads, so useful for general purposes, is that it is apt to swarm with these pests in an incipient state, and they only want the heat of a Cucumber box to bring them into active vitality. Watering and syringing with lime water will help to keep them down, but this to be effective should be done at night when they are in the wandering mood, as during the day they get into holes and crannies where the acidity of the lime has little chance of reaching them. Brewers' grains are also an attractive bait, on which after dark they may be found feeding. Young Cabbage-leaves or young leaves of Lettuces buttered a little on one side are a good substitute.—F. R. H.



HEREFORD—JULY 9TH.

ALTHOUGH I have known Hereford for some years, and have often enjoyed the hospitality of many of its inhabitants, I had not until this year the opportunity of visiting it during its Rose Show. I have seen its wonderful Show of Apples and Pears, but never its Roses, and there was a peculiar interest to me in going there for the first time to its annual Show, for it was at Hereford, as I have stated in the "Rosarian's Year-Book," that the idea of a National Rose Society was first thought of; and although the idea bore no fruit then, and though the National has never met in the grand old city, yet that fact gave an interest to my visit. This was considerably strengthened by the fact that my friend, Mr. Burnside, who had already originated the Farningham Show in 1879 and the Gloucester Show last year, had undertaken the post of Secretary, and with an energy that reminds one of those riders in the circus who manage to ride two horses abreast, had consented to undertake the management of two shows, Hereford and Gloucester, within two days of one another, and not only to undertake it but to carry it out with success. It was therefore a very great disappointment to all who wished well to the undertaking to find that the day dawned with a dark and ominous-looking sky, and that by the time the Show was opened a continuous downpour marred the efforts of all concerned, and prevented the attendance of those who wished it success.

The wet weather was still more unfortunate, because the Show was held in connection with the Agricultural Show, and instead of the Shire-Hall, the usual place of meeting, a tent was pitched for it close to the entrance of that Exhibition, near the racecourse, and most frequenters of Rose shows know what it is to paddle about on the wet grass on a show day. This was the more to be regretted, as some grand flowers were exhibited. When such famous growers as Mr. Grant, Messrs.

Cranston, and the Rev. F. R. Burnside live in its neighbourhood, it might be taken for granted that they would show in good form, and so they did; although the forwardness of the season had militated against them, as it had done against others, some magnificent flowers were staged.

Amongst nurserymen Messrs. Cranston took the first place, and showed some marvellously fine blooms. In the stand for forty-eights were the following blooms:—Sénateur Vaisse, Lady Mary Fitzwilliam, Ulrich Brunner, Marie Finger, Marie Baumann, Merveille de Lyon, Madame Charles Wood, Madame Marie Mauvin, Alfred Colomb, Countess of Pembroke, Star of Waltham, Duchesse de Valombrosa, Marie Rady, Magna Cbarta, Devienne Lamy, Her Majesty, Silver Queen, Rosieriste Jacobs, Etendard de Jeanne d'Arc, Exposition de Brie, The Bride, Madame Charles Crapelet, Etoile de Lyon, Maréchal Vaillant, Souvenir d'un Ami, Etienne Levet, Captain Christy, Pierre Notting, Madame Norman Néruda, Prince Arthur, Queen of Queens, Duke of Wellington, Reynolds Hole, Madame Willermoz, Louis Van Houtte, Souvenir de Paul Neyron, E. Y. Teas, Viscountess Folkstone, Lord Macaulay, Madame Margottin, Duchess of Bedford, Anna Ollivier, A. K. Williams, Perle de Lyon, L'Eclair, Dupuy Jamain, Dr. Sewell, and Mrs. Laxton. In this stand I may especially notice Marie Baumann, which I think was the finest bloom I ever recollect to have seen of this unsurpassed flower. L'Eclair was wonderfully bright, and Rosieriste Jacobs quite justified the position it has taken amongst rosarians as a fine dark flower, while I have never seen Etendard de Jeanne d'Arc shown so well, and forgive my friend Jules Margottin what I thought was his extravagant praise of this "Dijon" flower. Mr. Frank Cant was a good second, so good a one that there were but three or four points between the two boxes. Messrs. Harkness & Son were third. In the class for twenty-four trebles Messrs. Cranston & Co. were again first with La France, Sénateur Vaisse, Marie Baumann, Merveille de Lyon, Prince Arthur, Marie Finger, Alfred Colomb, Marquise de Mortemart, Marie Rady, Star of Waltham, Rosieriste Jacobs, Etienne Levet, Queen of Queens, Devienne Lamy, The Bride, Etoile de Lyon, Souvenir d'un Ami, Madame Charles Crapelet, Louis Van Houtte, Exposition de Brie, Madame Willermoz, E. Y. Teas, Souvenir de la Malmaison, and Reynolds Hole. Mr. Frank Cant was second, and Messrs. Cooling & Sons, Bath, third. In the class for twelve trebles, Teas, Mr. Frank Cant was first with excellent blooms of Comtesse de Nadaillac, Niphetos, Madame de Watteville, Madame Cusin, Souvenir d'Elise, Princess of Wales, La Boule d'Or, Innocente Pirola, Francisca Kruger, Rubens, and Madame Caroline Kuster. In the class for eighteen single Teas, Mr. Frank Cant was again first with Madame de Watteville, Souvenir d'Elise, Devoniansis, Caroline Kuster, Innocente Pirola, Boule d'Or, Princess of Wales, Madame Bravy, Madame d'Etienne, Francisca Kruger, The Bride, Souvenir d'un Ami, Perle des Jardins, Anna Ollivier, and Marie Van Houtte.

Among the amateurs Mr. W. J. Grant of Hope End, Ledbury, distanced all competitors. His thirty-six was a stand of surpassing excellence, and included fine blooms of Merveille de Lyon, Madame Susanne Rodocanachi, Madame Eugène Verdier, Alfred Colomb, Heinrich Schultheis, Charles Lefebvre, Her Majesty, Duchesse de Morny, Pride of Waltham, Ulrich Brunner, La France, Marie Baumann, Earl of Dufferin, a very grand flower; Emilie Hausburg, Sir Garnet Wolseley, Marie Rady, Marie Van Houtte, A. K. Williams, Madame Caroline Kuster, Etienne Levet, Monsieur Noman, Pierre Notting, a bloom of marvellous beauty, which obtained the silver medal for the best H.P. in the amateurs' class; Marquise de Castellane, Duke of Teck, Charles Darwin, Madame Cusin, Le Havre, Souvenir d'un Ami, Louis Van Houtte, Innocente Pirola, Comte Raimbaud, Niphetos, Etoile de Lyon, Marie Corbet, and Dr. Andry. S. P. Budd, Esq., Bath, was second. In the class for twenty-four, the Rev. F. R. Burnside was first with Catherine Mermet, Baronne de Rothschild, Ulrich Brunner, Madame Gabriel Luizet, Mons. Noman, Marie Van Houtte, Star of Waltham, La France, Madame Caroline Kuster, Alfred Colomb, Etoile de Lyon, Hon. Edith Gifford, Comtesse de Nadaillac, Etienne Levet, Madame de Watteville, Innocente Pirola, Duchesse de Valombrosa, Souvenir d'un Ami, Souvenir de Gabriel Drevet, Anna Ollivier, Merveille de Lyon, Jean Ducher, and Madame Cusin. In the class for eight trebles, Mr. W. J. Grant was again first with Le Havre, Her Majesty, Ulrich Brunner, Merveille de Lyon, Earl of Dufferin, very fine; Duchesse de Morny, Marie Rady, La France, Pierre Notting, Caroline Kuster, Charles Darwin, and Alfred Colomb. Second, Mr. S. P. Budd; and third, Miss Bulmer. In the class for twelve Mr. W. J. Grant was again first with Alfred Colomb, Her Majesty, Ulrich Brunner, Eugène Verdier, Madame de Watteville, Earl of Dufferin, a grand bloom; La France, Duke of Edinburgh, Madame Cusin, Souvenir d'un Ami, Abel Carrière, and Caroline Kuster. In the local class for twenty-four varieties, C. Pulley, Esq., was first with a box containing blooms of George Baker, Pride of Waltham, Marie Rady, La France, A. K. Williams, Duchesse de Valombrosa, François Michelin, Marie Baumann, Maurice Bernardin, Victor Verdier, Alfred Colomb, Comtesse de Nadaillac, Baroness Rothschild, Innocente Pirola, Prince Arthur, Madame Victor Verdier, Ulrich Brunner, Niphetos, Dr. Hogg, Souvenir d'un Ami, Fisher Holmes, Etoile de Lyon, Duke of Edinburgh, and Jules Finger. Jas. Rankin, Esq., was second. In the class for twelve Mr. Pulley was again first with Merveille de Lyon, Marie Baumann, La France, Alfred Colomb, Comtesse de Nadaillac, Charles Darwin, Innocente Pirola, Louis Van Houtte, Baronne de Rothschild, Duke of Wellington, Anna Ollivier, and A. K. Williams. In the class for six, the first prize and bronze medal of the N.R.S. was awarded to Mr. L. Davis, Leominster, for Captain Christy, La Rosière, Star of Waltham, Merveille de Lyon, Pierre Notting, and Madame Gabriel

Luizet. In the class for twelve of one sort, dark, the first prize was awarded to Messrs. Cranston & Co. for a fine stand of Rosieriste Jacobs, the second to Messrs. Harkness & Son for Marie Baumann, and the third to Mr. Frank Cant for Abel Carrière. For twelve of any light Rose, the first prize was awarded to Mr. W. J. Grant with Her Majesty, large; the second to Messrs. Cranston & Co. with Merveille de Lyon, and the third to Mr. Frank Cant with Baroness Rothschild. In twelve of any Rose, Messrs. Cranston & Co. were first with Alfred Colomb, Mr. W. J. Grant second with Marie Baumann, and Mr. Frank Cant third with Madame de Watteville.

There were two other features in the Show besides Roses—stands of herbaceous plants and table decorations. The former were pretty, but did not contain anything very striking. The latter decorations were some of them very good, but unfortunately the tent was dark, and the stormy day made it darker still. There was one table, which gained the first prize, which was worthy of all praise for the delicacy and elegance which marked it. The centre of the table was laid with a very delicate nuance of pink and cream coloured satin. In the centre was a stand containing Water Lilies and Ferns, while round it were small flower-holders with Water Lilies, not too crowded nor too many—together a most charming combination. The second, by Miss H. Biron, was also very pretty. There were also prizes given for bouquets, stands of flowers for hall, centrepieces, &c., some of them very pretty, the principal prizetakers being Miss Talbot, Miss De Winton, Miss J. Rankin, Miss Bulmer, Miss Landon, Miss Davis, and Miss Thomson.

The arrangements, which were carried out under the superintendence of Mr. Burnside, were excellent, and it was a great pity that all was so greatly marred by the very unfavourable weather.—D., Deal.

BROCKHAM.—JULY 9TH.

THE Brockham Amateur Rose Association held its twenty-fourth Show in the grounds of Mrs. Fuller and Miss Barclay at Rokefield, Westcott, near Dorking, on the date named. In 1888 the Show was held at the same place and on the self-same day. This year's Show would have been larger and better if it had been held a week earlier. But it has been difficult to fix suitable days for exhibitions of Roses this year, and shows held later than the end of June have as a rule been somewhat poorly represented in the south.

The members of this noted Rose Association may be congratulated, not only on belonging to a vigorous horticultural society, but also on having the opportunity of enjoying year by year in the best possible way some of the most beautiful spots in Surrey. Rokefield is a type of an English home, well placed, protected from rough winds by fine well-grown trees, and in view of some grand scenery; not too large, but thoroughly comfortable. The garden, in charge of Mr. Firmen, the gardener, is thoroughly well looked after, and with its Coniferae, its herbaceous plants, its trelliswork of Ivy, its well planned and planted beds, and its creepers, is worthy of notice. Everything about it is natural: there is no stiffness. The flowers and plants are there to be enjoyed, not merely to be looked at.

Amongst the many features one very marked one was a square of small beds planted very simply with yellow *Mimulus* (Harrisoni), blue *Lobelia*, *Lobelia cardinalis*, and just rising above these plants was a dark *Linaria*. The effect was very good and striking. A good specimen of the "mock" double Macartney Rose was growing up each side of the steps connecting the two terraces, while the single Macartney was enjoying itself up the wall of the house. The crimson and white *Rosa rugosa*, fine plants on the Manetti, were there, growing side by side, covered with great hips. Clumps of *Lilium testaceum* made themselves conspicuous, also *Delphinium*, notably *Cantab.* *Eryngium amethystinum* was present in its glory, and *Campanula lactiflora*, one of the very best of herbaceous plants, was simply magnificent, also *Alstroemerias* of sorts, and up the balcony there was a fine vigorous plant of *Berberis dopsis corallina*.

At the foot of the terrace the band of the King's Own Rifles (60th), under the direction of the bandmaster, Mr. F. Tyler, played a selection of music by Salaman, Gounod, Bizet, Delbrück, and others.

The Rose Show was held in a large tent, not well enough ventilated, but prettily decorated with flags and devices. There were sixteen exhibitors against twenty last year, and every class but one was represented. Mr. Appleby of the Box Hill Nurseries comes to the front at this Show with his plants for decoration. He sent up two vanloads of Feras and foliage plants. Moreover, he exhibited a box of twenty-four Roses, all of them cut from maiden plants, 4 feet high, large and fresh, a credit to any grower, comprising amongst others A. K. Williams, Xavier Olibo, A. Colomb, Monsieur Noman, Star of Waltham, Sultan of Zanzibar, and Etienne Levet. They greeted the visitors at the forefront of the tent. He had also a fine box of Teas.

Mr. George Paul of the Old Nurseries, Cheshunt, one of the Judges, also showed two boxes, one containing his new Rose Queen of Autumn, and the other The Earl of Dufferin, Sir Rowland Hill, Comte de Paris, Lady Alice, Gloire de Margottin, L'Idéal (very lovely, copper red, chaste Rose), Madame Bois, Madame Henry Pereire, Madame Désir, Lady Helen Stewart, and Madame Hoste.

T. W. Girdlestone, Esq., of Sunningdale, another of the Judges, also brought a box containing some new Teas—viz., Edith, Ethel Brownlow, and The Bride, besides that gem of garden Roses, *berberifolia Hardyi*.

There were three competitors for twenty-four Roses of any kind. Mr. C. E. Cuthell and Rev. A. Cheales, the enthusiastic Secretary, ran each other closely all through the Show. Mr. Cuthell took first honours (the N.R.S. gold medal) with Paul Neyron, Pride of Waltham, Marie

Rady (best Rose in the Show), Magna Charta, Leopold Premier, Comtesse d'Oxford, Pierre Notting, Ulrich Brunner, Duchess of Vallombrosa, Duke of Edinburgh, Ed. Morren, Her Majesty, Marquise de Castellane, Etienne Levet, Baronne de Rothschild, Charles Lefebvre, François Louvat, La France, E. Y. Teas, A. K. Williams, Captain Christy, Marie Baumann, and Marie Finger. Mr. Cheales took second place with a box of almost equal merit, containing amongst others Annie Wood, Clara Cochet, François Miehelon, Charles Lefebvre, Caroline Kuster, Madame T. Levet, Madame Ch. Crapelet, and Maréchal Niel.

These two competitors also took the prizes for twelve Teas in the same order. Mr. Cuthell secured the N.R.S. silver medal for Innocente Pirola, Madame Margottin, Souvenir d'Elise, Alba Rosea, Jules Finger, Marie Van Houtte, Souvenir d'un Ami, Anna Ollivier, Rêve d'Or, Comtesse de Nadaillac, Caroline Kuster, and Madame Lamhard. Mr. Cheales took the bronze medal for a box containing amongst others Maréchal Niel, Madame Willermoz, The Bride, "Rahel," and Marquise de Sanima. Mr. Cuthell's "Baroness" won first prize for nine of the same kind of Rose, and Mr. Cheales with Alfred Colomb took the second prize amongst four competitors. For four triplets Mr. Cheales came in first with Caroline Kuster, Reynolds Hole, Madame Gabriel Luizet, and Countess of Rosebery; and Mrs. Mortimer second with Madame Furtado, Madame Gabriel Luizet, and Duchess of Edinburgh.

In Class 5, twelve of any kind of Rose, the first prize (N.R.S. gold medal) went to Mrs. Leopold Seymour for Heinrich Schultzeis, Marie Rady, Caroline Kuster, Prince Arthur, A. K. Williams, Her Majesty, Beauty of Waltham, Mrs. J. Laing, Baroness Rothschild, Ulrich Brunner, La France, and Geo. Baker. The Hon. H. T. Ryder took second honours (the N.R.S. silver medal) for a fine Duke of Edinburgh, Souvenir J. G. Veitche, Emilie Hausburg, Abel Carrière, &c. A third prize was given to Mrs. Perkins.

Miss Barclay won the N.R.S. silver medal for six good Teas, and Mrs. Leopold Seymour the N.R.S. bronze medal, while Mrs. Perkins took an extra. For six of the same kind of Rose, amongst six competitors, Hon. H. T. Ryder with six good La France, Miss Barclay with Souvenir d'un Ami, and Mrs. Leopold Seymour with Merveille de Lyon took first, second, and third prizes respectively. For six different sorts of any kind Mrs. Poland took the first prize and Mrs. Hatch second, while for three Teas or Noisettes Mrs. Hatch took the first and Mrs. Poland second.

In the Garden Rose collection (a new class) Mr. Cuthell was the one and only competitor, which was a pity. His twelve sorts were Rugosa (two forms), macrantha, lucida plena (very pretty), Paul's Red Pet, Green Rose (very ugly), lucida, Paquerette, Austrian Yellow, Madame G. Brunt, Paul's White Pet, and Gloire de Polyantha.

For what reason the dinner table decorations were so poorly represented it is not easy to say. But so it was. There were only two competitors, Mrs. Cuthell and Miss Fuller of The Rookery. Mrs. Cuthell had filled a choice Burmese silver bowl with Tea Roses and Ferns, and the erection was very graceful and cleverly arranged, and deserved the first prize awarded to it. Miss Fuller's decoration, which took second prize, was a centre with four corners, very well done, but the flowers used were of too sombre a tint.

For the drawing-room decorations there was more competition—viz., five entries. Mrs. Benecke took first prize for a very tasteful composition in a tall brown wicker basket, made up of Eucharis, yellow Iris, Tea Roses, white Lily, Passion Flower, and Ferns. Miss Cuthell won second prize with a combination of Eryngium amethystinum and white Galega. A third (extra) was given to Miss Fuller for Alstroemeria, Spiræas, Marguerites, and tall grass. Mrs. Poland's decoration was in a large brown wickerwork nautilus shell, resting on a basis of moss studded with Mule Pinks (uncommon, but bulky). Miss Barclay's decoration of Alstroemeria and dark-leaved Maple was pretty, but showed signs of haste. In the buttonhole class it seems necessary to remind exhibitors that a buttonhole bouquet should be smaller than a hand bouquet; many of those shown are unsuitable for the purpose. But Miss Cuthell, Mrs. Nelson (berberifolia Haidi and Fern) and Mrs. Hatch were good enough to win the three prizes awarded amongst the eight competitors.

Mr. Cuthell's Marie Rady won the prize for the best Rose in the Show (Dean Hole's Book on Roses), but there were several others of almost equal merit.—A. B. ALEXANDER, *Shedfield Vicarage*.

DISS.—JULY 9TH.

THE Diss Horticultural Society, under the able management of Rev. F. Page Roberts of Seole, has had a prosperous career, and is worthy in many points of detail and arrangement of show matters of being held up as an example to the holders of Rose shows in larger and more pretentious places. At this year's Exhibition the Roses were particularly good, probably surpassing all previous displays. The local growers found blooms becoming very scarce, and had considerable difficulty in filling their stands, but fortunately the two first-class amateurs, Rev. J. H. Pemberton and Mr. E. B. Lindsell, were able to attend, and their splendid exhibits were in themselves worth a journey to see. The tents were erected near to the railway station in the grounds of the Rector, Rev. C. R. Manning, who hospitably entertained the exhibitors and Judges. The day was free from rain, and considering that there is no large population to draw from, the attendance of visitors was encouraging.

There is no open class for nurserymen, and five amateurs staged for Class 1, thirty-six Roses. The Judges could have had no hesitation about their award of first prize to Mr. Pemberton, for his blooms were

very large, highly coloured, and most of them fresh. Conspicuous among them were Her Majesty, Marshal P. Wilder, Marie Rady, Victor Hugo, Pride of Waltham, Niphetos, and Madame de Watteville. Mr. Lindsell was second, having excellent specimens of A. K. Williams, Her Majesty, Victor Hugo (brilliant), and a very clean and bright La France. Rev. A. Foster-Melliar was third, his best blooms being Harrison Weir and Star of Waltham. Rev. H. T. Frere staged an unequal collection, containing, however, a good specimen of Star of Waltham and a truly magnificent bloom of Alfred Colomb, which, though at least a day past its best, deservedly obtained the silver medal as the best H.P. in the Show. This Rose was absolutely perfect, half as big again as the Marie Baumann which gained the medal at the Crystal Palace, was afterwards exhibited at two other Shows (Ipswich and Harleston), and attracted attention by its size and form to the end.

Six twenty-fours were shown in Class 2, in which Mr. Lindsell, showing a smaller but more even collection, succeeded in turning the tables on his victor in the larger class, and winning first honours. His best blooms here were Marie Rady and Dr. Sewell. Mr. Pemberton, in his second prize box, had a fine bloom of Devienne Lamy. Mr. Foster-Melliar was third, his best being Marie Baumann.

In the class for eight triplets there were five exhibits, and Mr. Lindsell was again to the fore, having Emilie Hansburg, La Boule d'Or, and Comtesse Nadaillac, large and fine. Mr. Frere was second, his best triplets (considerably smaller) being Reynolds Hole and Comtesse de Nadaillac. Miss Penrice (gardener, Mr. Morris) was third.

Five boxes of twelve Teas were shown, and a wonderfully level lot they looked—none very large, the pride of bloom being evidently over, but clean and fairly well shaped. There was really not so very much to choose between the best and worst box of the five. The first prize eventually fell to Mr. Frere, in whose box was a bloom of Innocente Pirola—not very large, but perfect, and just at the right stage, which gained the silver medal as the best Tea. He had also a beautifully clean bloom of that lovely Tea, Madame Hippolyte Jamain. Mr. Lindsell was second, having good specimens of Princess of Wales and Niphetos; and Rev. H. A. Berners was third, showing Catherine Mermet and Madame de Watteville well. Mr. Pemberton failed to score by a small margin only. In six Teas Mr. Foster-Melliar was well ahead, showing good blooms of Catherine Mermet, La Boule d'Or, and Marie Van Houtte. Mr. Powell was second, and Rev. J. White third.

Two prizes, to be taken in plants, were offered by Mr. Frant Cant for twelve Roses, including not less than six Teas. Mr. Pemberton was first, having another fine bloom of Devienne Lamy; Mr. Page Roberts second, showing a good Charles Lefebvre. There were two local classes for Roses, which were not strongly patronised, and presented, as usual, rather a depressing appearance.

The classes for wild flowers form generally an interesting competition at Diss, three or four excellent botanists acquainted with the localities of the rarest species in Norfolk and Suffolk entering into friendly rivalry. On this occasion one of these on the Norfolk side was ill and unable to compete, while the Suffolk representative, who relies much on a variety of terrestrial Orchids, was hampered by the earliness and dryness of the season, which did not affect the Norfolk exhibitors, whose strength lies in bog plants. An unfortunate mistake in the judging, and the absence of the names of two of the prizewinners, deprived these classes of much interest. Relief was at hand, however, in four classes for hardy perennials, which are rapidly becoming a leading feature at this and other East Anglian Shows. £3 was offered as first prize for thirty-six bunches (open), but there was no one to oppose Mr. George Paul, whose display was magnificent, among his most noteworthy bunches being Centaurea macrocephala, Telekia speciosissima, Rudbeckia californica, and Delphinium Lanterneur. In the next class, for twenty-four bunches (amateurs), five stands were exhibited. Rev. F. Page Roberts taking the first prize with good specimens. Miss Taylor was second, and the three other exhibits were disqualified for various reasons. The remaining two classes were well filled, but there seems at present a considerable want of general knowledge as to what may be exhibited as a hardy perennial. It is certain, however, that the flowers add much by their colour and variety to the gaiety of the general display, and contribute very strongly to the popular idea of a flower show.—W. R. RAILLEM.

DURSLEY.—JULY 10TH.

A CORRESPONDENT sends us a newspaper report of this Show, observing that as he was a successful exhibitor he hesitated to write an account of the Show himself. In the chief nurserymen's class the prizes were awarded Messrs. J. Jefferies & Sons, Cirencester; G. Cooling and Sons, Bath; and Dicksons, Limited, Chester. The report says the cleanness, evenness, and freshness of Messrs. Jefferies & Sons' blooms were very marked. The other exhibits, considering the remarkably dry season, were admirable, though the effect of the long spell of dry weather was rather too apparent. Chief among the new Roses were Her Majesty, Victor Hugo, and Earl Dufferin.

Referring to the amateurs' and gentlemen's gardeners' classes, the exhibits which gained the first prize in Class 4 (Mr. Budd's) comprised particularly fine varieties, amongst the dark sorts being the Sultan of Zanzibar and Elclair. The second prize (Major Phillips) was gained by fine blooms, the colours being good, particularly those of Dupuy Jamain, Etoile de Lyon, Rêve d'Or, Belle Lyonnaise, and Madame Trifle. The third prize (Mr. Edmunds) included among other good light varieties La France and Ulrich Brunner. Conspicuous in the collection (Mr. Budd's) which gained the first prize in Class 5 were A. K. Williams, Charles

Lefebvre, Comtesse de Nadaillac, and three blooms of S. Reynolds Hole. The second prize, gained by Major Phillips, comprised fine blooms of Bouquet d'Or, Marquise de Castellane, Madame G. Luizet, and Marie Van Houtte. The third prize, awarded to Rev. A. K. Cornwall, contained good blooms of Général Jacqueminot and Paul Verdier. First prize, Class 6, Major Phillips.—Two Roses in this collection secured the two National Rose Society's medals, the blooms being Lord F. Cavendish and Devoniensis, the latter being full of substance. The collection also contained good specimens of Etienne Levet and Marquise de Castellane. The second prize stand (Mr. Budd) consisted of fresh and bright Roses, including good blooms of Alfred Colomb, Ulrich Brunner, Earl Dufferin, and Reynolds Hole. The third prize awarded to Mr. Winterbotham. Class 7.—The Roses worthy of notice in the exhibit which secured first prize, awarded to Mr. Owen, were Rêve d'Or, Bouquet d'Or, and E. Y. Teas. Class 8.—First prize (Mr. Small) was a stand of neat and well shaped Roses, among which may be mentioned Souvenir de Spa and Duke of Teck. Class 9.—Mr. Small gained the first award, showing a very neat collection. In table decorations there was a spirited competition. The winner of the first prize, Major Phillips, showed a remarkably fine collection of Roses, particularly of the Tea varieties. The second prize, gained by Miss A. Aycliffe, was very attractive, the choicest blooms including Baroness Rothschild. Class 13.—The premier prize for a basket of Roses tastefully arranged was won by Miss Cornwall. The second award was carried off by a basket set off well with William Allen Richardson and some good Moss blooms. The exhibitor was Major Phillips. The remaining prize was won by Mr. Champion.

GLOUCESTER.—JULY 11TH.

THE East Gloucestershire Rose Society, which was inaugurated under the auspices of my excellent friend the Rev. F. A. Burnside, held its second Show at Gloucester on the date above named. I recorded the success of the first one held there last year, and the pleasant surprise it had in store for me, and I am glad to have been able to attend its second excellent Exhibition, which, although not equal in extent owing to the character of the season, yet contained some of the very best flowers I have seen this season. The withdrawal of Mr. T. B. Hall was sorely felt here, for his Roses were greatly missed, and the character of the season, which although one of the very best I ever recollect for Roses, has put so many by its forwardness so completely out of the field that the number of flowers exhibited fell short of those of last year, but the quality of the flowers was infinitely better. The two local exhibitors, if I may so call them, though they are both Herefordshire men—Messrs. Cranston amongst nurserymen, and Mr. W. J. Grant amongst amateurs—exhibited in grand form. There was no skimming of Tea Roses as was so much the case last year amongst exhibitors. There were no dull vapid looking flowers amongst the Hybrid Perpetuals as was so much the case then, and there were many blooms of surpassing excellence. The Show was held in the Corn Exchange, an excellently lighted room for the purpose, and it was a pleasure to find that Mr. R. Wheeler was present at our luncheon as the Mayor of Gloucester. All the arrangements were well carried out by the two Secretaries, and as the weather was fine, a great contrast to the Hereford Show, there was a good attendance, and altogether I hope that the Society has scored a success.

In the nurserymen's class, Messrs. Cranston & Co., who have exhibited so well this season, were first in forty-eights with a very beautiful stand of flowers consisting of the following varieties—Madame Eugène Verdier, Maréchal Vaillant, Emilie Hausberg, Le Havre, Madame Lacharme, Madame Charles Wood, a marvellously fine bloom; Her Majesty, Alfred Colomb, Comtesse de Nadaillac, Eclair, very fine; this has been exhibited by Messrs. Cranston this year in better form than I have ever seen it; Baroness Rothschild, Star of Waltham, Marie Rady, very fine; Louis Van Houtte, Marie Cointet, Lord Frederick Cavendish, Etendard de Jeanne d'Arc, very beautiful; Pierre Notting, Francisca Kruger, Général Jacqueminot, Edouard Morren, a fine bloom; Ulrich Brunner, The Bride, Dupuy Jamain, La France, François Louvat, Madame Charles Crapelet, Etienne Levet, Madame Thérèse Levet, Dr. Andry, Madame Margottin, Marie Baumann, a splendid bloom; Merveille de Lyon, Exposition de Brie, Marquise de Castellane, Prince Camille de Rohan, Perle de Lyon, A. K. Williams, Madame Willermoz, Marie Finger, Prince Arthur, Heinrich Schultheis, Sénateur Vaisse, Queen of Queens, and Roisieriste Jacobs, a very fine bloom of a flower which Messrs. Cranston have shown so well this season. Messrs. Maek and Son of Catterick, Yorkshire, were a good second; and Messrs. Jefferies & Son of Cirencester, third. In the class for twenty-four trebles Messrs. Cranston were again first with Alfred Colomb, Madame Charles Crapelet, The Bride, very beautiful; Etienne Levet, Prince Arthur, Queen of Queens, Madame Willermoz, Marie Baumann, Prince Camille de Rohan, Marquise de Castellane, Madame Charles Wood, Marie Rady, La France, Star of Waltham, Louis Van Houtte, Maréchal Vaillant, Baroness Rothschild, Viscountess Folkestone, Exposition de Brie, Roisieriste Jacobs, a very fine triplet; Merveille de Lyon, Alfred Dumesnil, and Sénateur Vaisse. Mr. George Prince of Oxford was second, and Messrs. Jefferies & Son of Cirencester third. For twenty-four singles Messrs. Cranston & Son were again first with Star of Waltham, Charles Lefebvre, Madame Caillat, Pierre Notting, Lady Mary Fitzwilliam, Earl of Pembroke, The Bride, Alfred Colomb, Edouard Morren, Dupuy Jamain, Etendard de Jeanne d'Arc, Madame Charles Wood, Merveille de Lyon, Fisher Holmes, Princess Beatrice, Prince Arthur, Madame Charles, Etienne Levet, Princess of Wales, Devienne Lamy, Alfred Dumesnil, Ulrich Brunner, Marie Cointet,

Lord Frederick Cavendish, Thérèse Levet, Ulrich Brunner, Marie Verdier, Eclair, Queen of Queens, Exposition de Brie, Etoile de Lyon, Sénateur Vaisse, La France, and Maréchal Vaillant.

In the class for eighteen Teas Mr. George Prince of Oxford was first with one of his lovely stands of flowers, consisting of Comtesse de Nadaillac, Madame Cusin, Niphetos, Anna Ollivier, Mons. Furtado, Princess of Wales, Madame Hippolyte Jamain, Marie Van Houtte, Grace Darling, Marcella Rhoda, Madame de Watteville, Cornelia Koeh, Souvenir de S. A. Prince, Hon. Edith Gifford, Etoile de Lyon, Catherine Mermet, The Bride, and Francisca Kruger. In the class for twelve Teas Mr. Prince was again first with Jean Ducher, Princess Vera, Souvenir d'un Ami, Devoniensis, Rubens, Souvenir de Thérèse Levet, Caroline Kuster, Catherine Mermet, La Boule d'Or, Comtesse de Nadaillac, and Niphetos. Messrs. Jefferies & Son were second. In the class for twelve of any one dark Rose Messrs. Mattoek were first with Horace Vernet, Messrs. Cranston second with Alfred Colomb, and Mr. George Prince third with Earl of Dufferin. For twelve of any light Rose Mr. George Prince was first with Merveille de Lyon, Messrs. Maek and Son second with the same, and Messrs. Cranston & Co. third with the same. In the class for twenty-four blooms by Gloucestershire nurserymen Messrs. Jefferies & Son were first with Mrs. John Laing, Souvenir d'Elise, Le Havre, Baroness Rothschild, Duke of Edinburgh, Catherine Mermet, Victor Hugo, Mdle. Susanne Rodocanachi, a very fine flower of great substance; Marie Rady, Ferdinand Chaffalte, Madame Hippolyte Jamain, Lady Helen Stuart, very bright; Paul Neyron, Dupuy Jamain, Comtesse de Nadaillac, A. K. Williams, Captain Christy, Duke of Teck, Maréchal Niel, and Marshal P. Wilder. This was a very beautiful stand. Messrs. Heath and Son of Cheitenham were second.

Passing now to the amateurs it will be found that Mr. W. J. Grant occupied the same place amongst amateurs that Messrs. Cranston did amongst nurserymen. His stand of thirty-six, in which he was easily first, contained Lady Sheffield (a remarkably fine bloom), Niphetos, Mrs. Jowitt, François Michelin, Etienne Levet, Baroness Rothschild, Madame Hippolyte Jamain, Horace Vernet, Madame Gabriel Luizet, Alfred Colomb, Duchesse de Morny, Louis Van Houtte, La France, Abel Carrière, Innocente Pirola, Le Havre, Her Majesty, Duke of Edinburgh, Marie Verdier, A. K. Williams, Souvenir d'un Ami, Earl of Dufferin (very fine), Merveille de Lyon, Général Jacqueminot, Marie Finger, Pierre Notting (a magnificent bloom), Madame Cusin, Marie Baumann, Heinrich Schultheis, Comtesse d'Oxford, Dingee Conard, Caroline Kuster, Madame Eugène Verdier, Baroness Rothschild, and Emilie Hausberg. S. P. Budd, Esq., of Bath, was second. In the class for twenty-four Mr. Grant was again first with Capt. Christy, Comtesse de Nadaillac, Ulrich Brunner, François Michelin, Dupuy Jamain, Duchesse de Morny, Alfred Colomb, Her Majesty, Earl of Dufferin, Merveille de Lyon, Dr. Andry, Baroness Rothschild, A. K. Williams, Souvenir d'un Ami, Caroline Kuster, Le Havre, Duke of Edinburgh, Heinrich Schultheis, Comtesse d'Oxford, Louis Van Houtte, Emilie Hausberg, Abel Carrière, and Dupuy Jamain. The Rev. F. A. Burnside of Burch Vicarage was second, and Mr. J. Besley third. In the class for twelve trebles Mr. Grant was also first with Caroline Kuster, Madame Cusin, Madame de Watteville, Marie Rady, Her Majesty, Alfred Colomb, La Boule d'Or, Earl of Dufferin, Merveille de Lyon, Abel Carrière, Emilie Hausberg, and Souvenir d'un Ami. In twelve single trusses of any light Rose, Mr. Thomas Hobbs of Lower Easton, Bristol, was first with Merveille de Lyon; Mr. W. J. Grant second with Her Majesty.

In the Tea and Noisette division Mr. W. J. Grant also occupied the premier place. In eighteen Teas he had a fine stand, consisting of Madame de Watteville, Souvenir d'un Ami, Souvenir de Thérèse Levet, Comtesse de Nadaillac, Anna Ollivier, Etoile de Lyon, Innocente Pirola, Catherine Mermet, Madame Margottin, Marie Van Houtte, Princess of Wales, Madame Lambard, Niphetos, Caroline Kuster, Francisca Kruger, Hon. Edith Gifford, Madame Cusin, and La Boule d'Or. The Rev. F. R. Burnside was second. In the class for twelve Teas the same exhibitors occupied the same position. Mr. Grant's blooms were Madame de Watteville, Etoile de Lyon, Madame Cusin, Souvenir d'Elise, Catherine Mermet, La Boule d'Or, Innocente Pirola, Caroline Kuster, Comtesse de Nadaillac, Souvenir de Thérèse Levet, Niphetos, and M. Margottin. Mr. T. Hobbs was third. In the class for six of any one Tea Mr. Grant was first with Caroline Kuster; Mr. Burnside second with Madame Cusin; and Mr. Hobbs third with Caroline Kuster.

There were special classes for Gloucestershire amateurs, so as to give them a chance where the large growers outside would not enter the lists against them. In the class for twelve trusses, Mr. Conway Jones was first with Thomas Mills, La France, Charles Lefebvre, Baroness Rothschild, Merveille de Lyon, Général Jacqueminot, Madame Lambard, Duke of Teck, Souvenir d'un Ami, Marie Van Houtte, Prince Camille de Rohan, and Grace Darling. The Rev. Dawson was second, and Mrs. Wallis third. In the class for six Mr. W. Cooke was first with Edouard Morren, Mrs. Baker, Star of Waltham, Captain Christy, A. K. Williams, and Marie Verdier. Mr. James Grant was second, and Mr. A. Darrett third. In the class for six varieties Mrs. Pike was first with Paul Neyron, Mrs. Jowitt, Baroness Rothschild, Fisher Holmes, and Duke of Teck. Mrs. Walter was second, and Mr. W. C. Firth third.

The National Rose Society's silver medal for the best Hybrid Perpetual was awarded to Mr. W. J. Grant for, I believe, Pierre Notting; and in Teas to the Rev. F. R. Burnside for a beautiful bloom of The Bride.

There was a very spirited competition amongst ladies for the best

basket of Roses with only Rose foliage, and the first prize was awarded to Mrs. Burnside, for a basket which has made me alter my opinion. I have often said that I have never seen a basket of Roses pure and simple which gave me complete satisfaction. I have seen many pretty baskets, but they have been mostly smothered with Maidenhair, which, like charity, is made to cover a multitude of sins, but I must now admit the "Pinafore" axiom of "hardly ever," for this was a most exquisite basket, composed entirely of Teas, and this mostly in the bud or half-expanded form. They were gracefully laid in; there was neither on the one hand nor on the other hand carelessness; they were thoughtfully arranged, and gave a lesson which many might take advantage of. Messrs. Rawlins second, and Mrs. Pike and the Hon. Miss Rae equal thirds.

It will thus be seen that amidst many difficulties the East Gloucestershire Society has again scored a success, and I have little doubt that it is arousing an interest in the county on the subject of Rose-growing which must be productive of good to the interests of the flower, which is so universally and deservedly popular.—D., *Deal*.

ALEXANDRA PALACE.—JULY 12TH.

ROSE Shows are not an annual fixture at the Alexandra Palace, for the sufficient reason that Rose time does not always find the doors of the spacious building open to the public. It has had a chequered career, and several attempts have been made, the majority without success, to make it sufficiently attractive to secure a good measure of public support. Another vigorous effort is being made now, under the managerial guidance of Mr. Lee Bapty, to make it a popular resort, and there may be more hope of success than with the overwhelming competition of the exhibition days. With the Rose Show on the above date was appropriately combined the interesting ceremony of the crowning of the Rose Queen, conducted by Father Nugee, and the decorations, chiefly of Roses, prepared in honour of this event, together with the Exhibition itself, formed a most pleasing display.

The classes were fairly well filled, but the date was a little too late to admit of blooms being shown of the highest class. The Rev. J. H. Pemberton was in excellent form, and Messrs. Paul of Cheshunt, Cooling, Harkness, Burch, and others amongst the trade growers were well represented. The general arrangements of the Show were not unsatisfactory, but the plan of placing small numbered tickets on the stands, and writing out the exhibitors' cards for placing there after the judging was completed, led to much delay, and should be altered another year. It is certainly not an improvement on the usual plan of putting on the exhibitor's card at once and reversing it till the Judges' awards have been made.

The results are appended:—

NURSERYMEN'S CLASSES.

In Class 1, forty-eight blooms, distinct, an extremely neat, fresh, and bright collection from Messrs. Paul & Son, The Old Nurseries, Cheshunt, deservedly secured premier honours. Though not large, the blooms were in very good condition. The varieties were:—Back row: Alfred Colomb, Her Majesty, Marie Baumann, Madame Susanne Rodocanachi (very bright and effective), Madame Prosper Laugier, Merveille de Lyon, Reynolds Hole, Countess of Rosebery, Sénateur Vaisse, Marie Verdier, Abel Carrière, Madame Alphonse Lavallée, Heinrich Schultheis, Duke of Edinburgh, Captain Christy, and Marshall P. Wilder. Middle row: Pierre Notting, Madame Victor Verdier, La France, Victor Hugo, Madame Gabriel Luizet, Maurice Bernardin, Niphetos, Charles Lefebvre, Horace Vernet, Madame Musset, Alphonse Soupert, Harrison Weir, Dr. Andry, Madame de Selve, Comte Raimbaud, and La Duchesse de Morny. Front row: Auguste Rigotard, Etoile de Lyon, Sir Rowland Hill, Mrs. J. Laing, Xavier Olibo, Duke of Teck, Comtesse de Nadaillac, and Etienne Levet, A. K. Williams, Catherine Mermet, Duchess of Bedford, Perle des Jardins, Charles Darwin, The Bride, Mons. E. Y. Teas, and François Michelin. Messrs. Harkness & Son, Bedale, who were very weak compared with their stands at the Crystal Palace, were second, the best blooms being Duc de Rohan, Fisher Holmes (very fine), Madame Lavallée, Baronne de Rothschild, and Mrs. Jowitt. Messrs. G. & W. H. Burch, Peterborough, took the remaining prize, showing very well.

With twenty-four varieties, three blooms of each, Messrs. Paul and Son again won. They had an excellent stand of well balanced flowers. Horace Vernet was perhaps the best, but Comte Raimbaud, Charles Darwin, Marie Verdier, and Madame Alphonse Lavallée were also good. Second, Mr. W. Rumsey, Joynings Nursery, Waltham Cross. Third, Messrs. Cooling, Bath.

Messrs. G. & W. H. Burch had one of the best stands in the Show in the class for twenty-four blooms, single trusses; a few lacked size, but all were in excellent condition. The varieties were:—Back row: Star of Waltham, Violette Bouyer, Marie Baumann, Madame Chas. Wood (very fine), Duchess of Bedford, Elie Morel, Charles Darwin, and Etienne Levet. Middle row: Her Majesty, Charles Lefebvre, Marie Verdier, A. K. Williams, Queen of Queens, Duke of Connaught, Madame E. Verdier, and Xavier Olibo. Front row: Fisher Holmes, Countess of Oxford, Reynolds Hole, Mons. E. Y. Teas, Horace Vernet (fine), Ulrich Brunner, Alfred Colomb, and Marie Rady. The second prize went to Messrs. Paul & Son, Cheshunt, whose best blooms were Etienne Levet, Chas. Lefebvre, Comte Raimbaud and Horace Vernet; and Messrs. Cooling were a very good third.

In the class for twelve Teas or Noisettes Mr. Prince of Oxford's seedling Briar produce was to the fore. He had a very neat stand composed of the following varieties:—The Bride, Comtesse de Nadaillac (very good), Catherine Mermet, Souvenir de S. A. Prince, Madame

Cusin, Niphetos, Princess of Wales, Jean Ducher, Marie Van Houtte (very fine), Souvenir d'un Ami, and Innocente Pirola. Messrs. Cooling were a close second with a fresh, bright, and pleasing stand, and Messrs. Burch third, also showing excellently.

AMATEURS' CLASSES.

With thirty-six blooms, distinct, four competed, and the first prize went to the Rev. J. H. Pemberton, Havering-atte-Bower. He had a neat and fresh lot of flowers, though somewhat small. The Teas were best. The following were the varieties:—Back row: Lady Mary Fitzwilliam, Duchess of Bedford, Hippolyte Jamain (a good bloom), Marie Baumann, J. S. Mill, Horace Vernet, Ulrich Brunner, Exposition de Brie, Merveille de Lyon, Benoit Comte, François Michelin (good), and Louis Van Houtte. Middle row: Général Jacqueminot, Countess of Rosebery (bright and fresh), Marshall P. Wilder, Baronne de Rothschild, Sénateur Vaisse, Madame E. Verdier, A. K. Williams (neat and bright), Henri Lédéchaux, Charles Lefebvre, Alfred Colomb, Madame Victor Verdier, and Catherine Mermet (very large but coarse). Front row: Niphetos, (very good), Abel Carrière, Madame de Watteville, Belle de Bourg la Reine, Souvenir d'Elise Vardon (good), Victor Hugo, Reynolds Hole, Lady Helen Stewart, Comtesse de Nadaillac (large but nearly past), Xavier Olibo, Caroline Kuster (very fine), and Sir Rowland Hill. In the second prize lot of Mr. E. B. Lindsell, Hitchin, a bright fresh collection of small flowers, the best blooms were Her Majesty, Duchess of Bedford (very rich) Dr. Andry, and Comtesse de Nadaillac. At 3.30 P.M., when our representative left the Show, the officials had not placed the exhibitor's card on the third prize stand; it was merely ticketed. Who is No. 35?

The first prize box in the class for twenty-four blooms also came from the Rev. J. H. Pemberton. The blooms were large but somewhat coarse, and the card contained a note by the Judges "Badly put up," which was perhaps hardly called for. The varieties were:—Back row: Ulrich Brunner, large, but very coarse; Countess of Rosebery, Merveille de Lyon, Exposition de Brie, Marie Baumann, François Michelin, Alphonse Soupert, and Countess of Oxford. Middle row: Duchess of Bedford, Marie Verdier, Sir Rowland Hill, Camille Bernardin, Marshall P. Wilder, Baronne de Rothschild, A. K. Williams (good), and Charles Lefebvre. Front row: Earl Dufferin, Madame Victor Verdier, Horace Vernet, Captain Christy, Lady Helen Stewart, Reynolds Hole, Marquise de Castellane, and Dingée Conard. The second prize flowers, those of Mr. Lindsell, do not call for comment. Mr. Mallender, gardener to Miss Mellish, Hodsock Priory, Worksop, was third, and there was one other box. The Rev. J. H. Pemberton again won with twelve blooms, a very neat, fresh, bright stand, the best being Charles Lefebvre, an excellent bloom; La Duchesse de Morny, and Niphetos. Second, Mr. E. Mawley, Berkhamstead; third, Mr. Lindsell, the latter showing most Teas.

Mr. Lindsell won with six Teas or Noisettes, La Boule d'Or, Niphetos, Comtesse de Nadaillac, Jean Ducher, Princess of Wales, and Caroline Kuster admirably representing him. Mr. Pemberton was second with larger but less finished flowers, and Mr. E. King third. The first prize in the local class was accompanied by a special challenge trophy offered by North London nurserymen, and was offered for flowers grown within five miles of the Alexandra Palace. Mr. Bateman, Twisden Road, Highgate, followed up his success in the town class at the National Society's Show by winning somewhat easily; Messrs. Agate, New Southgate, and White, Highgate, being second and third.

OPEN CLASSES.

In class 10, twelve blooms of any 1887, 1888, or 1889 variety, Mr. George Prince was first with a capital box of the deep crimson Earl Dufferin, an H.P. that is likely to prove useful. Messrs. Paul were second with a capital box of Her Majesty, and Messrs. Cooling third with Earl Dufferin. In class 11, twelve blooms of any new Rose, Messrs. Paul of Cheshunt won with a rosy crimson H.P., named The Dowager Duchess of Marlborough.

Mr. Prince won with twelve of any yellow Rose, having a very neat box of Comtesse de Nadaillac, the back row flowers very fine. Messrs. Burch followed with the same variety. In the corresponding class for white Roses Messrs. Harkness & Son, Bedale, Yorks, won with a charming box of Merveille de Lyon; Mr. E. G. King, Cambridge, being second with Niphetos, Mr. Prince third with Merveille de Lyon. For twelve blooms of any red or crimson Rose Messrs. Burch were placed first. They had a moderate stand of Horace Vernet, neat, but not in the freshest condition. One of these flowers was selected as the best Rose in the Show, and was awarded the silver cup offered by Mr. R. Beale. Messrs. Paul were second with a good box of Alfred Colomb, and Messrs. Cooling third with the same variety. Baskets and bouquets of Roses from such masters in the art of flower arrangement as Messrs. Perkins, Coventry, and J. R. Chard, Stoke Newington, were very much admired. The former won with a bouquet and the latter with a basket, both very beautiful arrangements. Roses in pots were only shown by Mr. Rumsey. He had a neat lot of plants and was awarded first prize.

MISCELLANEOUS EXHIBITS.

Very effective groups of plants came from Messrs. T. S. Ware, Tottenham; and B. S. Williams, Upper Holloway; and to each a silver medal was awarded. That of the first-named was largely composed of Liliums, including the beautiful Leitchlini, pale yellow with purplish brown spots; Campanulas, Iceland Poppies, Gaillardias, Irises, Armeria cephalotes rubra, and other fine perennials. Mr. Williams' group, which was made up of indoor plants, included Impatiens Sultani variegata, Cattleya Mendeli, Oncidium janieriense, Miltonia vexillaria, Calanthe masuca grandiflora, Odontoglossum Schlieperianum, Epidendrum cochleatum,

and the beautiful *Cypripedium superbiens*. A silver medal was also awarded to Messrs. Alfred Peel & Son, Wood Green, for their exhibition of amateurs' greenhouses, which are admirably constructed moveable fixtures. The Agri-Horticultural Society, Tonbridge, exhibited their Aeme weed killer, and a broad walk was pointed out in the Palace grounds where experiments in weed destruction had been made with satisfactory results. The weed killer was highly commended. A certificate of merit was awarded to Messrs. Ogden & Co., Wood Green, for greenhouses and frames designed for small cultivators; also to Mr. Phippen, for taste displayed in the decoration of a harp with Roses, which was to be used in the crowning of the Rose Queen. Fertilising moss, exhibited by Messrs. R. Beale & Co., New Southgate, and apparently useful for striking cuttings and growing young plants in, was commended.



EVENTS OF THE WEEK.—The following are Rose Show fixtures for the ensuing week:—To-day (Thursday) the National Rose Society's provincial Show at Sheffield; also exhibitions at Helensburgh and Salterhebble. On the 19th Ulverstone, on the 20th Manchester, on the 23rd Christleton and Tibshelf. The Gardeners' Orphan Fund dinner will be held at Cannon Street Hotel on the 19th. The National Carnation Society's Show is fixed for Tuesday, July 23rd, at the Drill Hall, James Street, Westminster.

BULBS FOR THE ROYAL PARKS.—Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, inform us that Her Majesty's Commissioners of Works have again this season, making the fifteenth time, accepted their tender for the supply of bulbs (*Hyacinths*, *Tulips*, *Crocus*, &c.) for the Royal parks.

LONG BROAD BEANS.—In reference to your question at page 26 on this subject I beg to say that I have gathered specimens of Carter's Leviathan Broad Bean varying in length from 15 inches to 17 inches.—H. W. WARD, *Longford Castle, Salisbury*.

CROYDON SHOW.—We are informed that the silver medal for the best bloom in the local classes for Roses was won by Rev. W. Wilks, and not by Mr. J. Brown, as inadvertently stated in our report.

AT the last Committee meeting of the Richmond Horticultural Society, a resolution conveying a vote of thanks and congratulations was passed to Mr. W. BROWN, florist, St. Mary's Grove Nursery, Richmond, on his success in winning for the third time in succession the handsome Jubilee Challenge Vase, value 26 guineas, given by Mrs. P. A. Lee to the Chiswick Horticultural Society, for a group of plants arranged for effect, and which cup has now become his property.

NOBLE AND OXONIAN STRAWBERRIES.—An "Amateur Strawberry Grower" desires to state his experience with Strawberries. He has been the most successful with Noble and Oxonian. The former produced an early and magnificent crop, and the latter is now yielding splendid solid fruit. For an early and late Strawberry he does not think growers can at present do better than try these varieties.

PRESENTATION TO MR. W. H. WILLIAMS.—Last week there was a very interesting gathering in the banqueting hall of the Council House, Salisbury, the occasion being a presentation to Mr. Walter H. Williams, Hon. Secretary of the Wilts Horticultural Society, in commemoration of his forthcoming marriage. The present was a beautiful cottage piano, the value being 55 guineas. On a silver plate on the front of the instrument was engraved the following inscription:—"Presented to Mr. W. H. Williams, Hon. Secretary to the Wilts Horticultural Society, by the Committee, Exhibitors, and Friends upon the occasion of his marriage, July, 1889." The Mayor (Mr. S. Parker) presided, and having expressed the great pleasure that it afforded him being present on that occasion, he called upon Dr. F. W. Coates to make the presentation. This was done in an able and highly appropriate manner. Mr. Williams, in acknowledging the present in a suitable speech, remarked that "as servants of Nature they—the members of the Horticultural Society—were drawn into association with one another, and were not the beauties of Nature and the harmony of music closely allied? They both tended to elevate and lift them above the daily round of common toil."

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The thirteenth annual Exhibition of the above Society will be held on Tuesday, July 23rd, under the auspices of the Royal Horticultural Society in the Drill Hall of the London Scottish Volunteers, James Street, Westminster. Upwards of a hundred prizes are offered in varying amounts from 40s. downwards. The southern flowers would be at their best a week previous to the Show, but better blooms will be brought from the midland districts this year. The prospects are good for one of the largest exhibitions ever held by the Society. By the courtesy of the members of the Horticultural Club a luncheon will be provided at the Hotel Windsor, Victoria Street, at 1.30 p.m., for the Judges, members of the Society, and their friends; tickets are 2s 6d. each, and may be obtained through the members of the Society. Robert Hogg, Esq., LL.D., Vice-President of the Society, has kindly consented to preside. The Hon. Secretary will be glad to take the names of ladies or gentlemen to be proposed as members. Subscriptions were due in January. Mr. Henwood Earley, Reading, is the Treasurer, who will gladly receive all unpaid subscriptions, or they may be paid to the Secretary, Jas. Douglas, Ilford, Essex.

"WALKS IN HOLLAND."—Under this title Mr. Percy Lindley has issued another of his sixpenny handbooks to travellers, and persons who contemplate a visit to the eastern shores of the North Sea will do well to possess it, for it is attractive, interesting, and instructive. It is published at 125, Fleet Street.

ROSE SOUVENIR DE LA MALMAISON.—This old Bourbon Rose is presenting blooms this season of extra good quality. Owing no doubt to the continuance of warm bright weather, this being anything but a wet weather Rose, the blooms are perfect in form; and the colour, always admired, seems to be especially rich in its tint of pink or deep blush.—A.

SUPERLATIVE RASPBERRY.—Mr. George Bunyard sends us fruits of this variety, which, however, were shaken into a jam-like mass in transit, through the box not having been filled. We know the variety very well as a good grower and free bearer of fine fruits. It has been honoured with the first-class certificate of the Royal Horticultural Society.

YELLOW VIOLAS IN WINDOW BOXES.—These are very showy plants for the adornment of window boxes, growing as they do naturally all one way. The flowers form dense masses of colour, and if backed up with scarlet *Pelargoniums* an effective contrast is afforded. If the seed pods are kept picked off, and the plants freely supplied with water, they go on flowering all the summer.

DOUBLE PETUNIAS FOR BEDDING.—I lately saw a mass of these planted on a sloping bank; they were not more than 6 inches high, and though early in the season were freely covered with blooms varied in colour, very double, and most of them beautifully fringed. The plants were raised from seed sown early in the present year, therefore it does not appear necessary to take the trouble to winter a stock of plants and propagate from them in the spring to obtain a good display of bloom in summer.—M.

WE are requested to state that the next Show of the TAUNTON HORTICULTURAL AND FLORICULTURAL SOCIETY will be held, by permission of Dr. Kinglake, in the Vivary Park on the 15th August next. The old list has been carefully revised by the Committee, and several alterations made and new classes introduced. Good competition is expected, and one of the best provincial shows in the kingdom. Schedules may be obtained of the Hon. Sees., Messrs. H. Maynard and A. Hammett, at 5, Hammet Street, Taunton.

NICOTIANA AFFINIS IN POTS.—A correspondent writes:—"In one of the greenhouses attached to the Victoria Park, Portsmouth, a number of these plants in 4-inch pots are flowering, the spikes being about 2 feet long. Mr. Hatch, the gardener in charge, states the seed was sown at the end of February and the plants grown in gentle heat at first, and subsequently in cooler positions. They are very effective in the evening."

SEEDLING PINKS.—"In the borders of the Park are flowering some extremely neat Pinks raised from seed. Some are deeply fringed, others not so much so, and the colours are pleasing. Such plants are valuable for the margins of shrubbery borders, and few persons appear to know how easily they can be raised from seed and what a pleasing variety can be obtained in this manner."

FOXGLOVES.—A very fine sight is presented by a colony of the common Foxglove in one of the woods belonging to the Crown in

Hampshire. A piece of land, about 3 acres in extent, is thickly studded all over with spikes of bloom, many between 4 and 5 feet high, the flowering part at least 2 feet long. I never saw Foxgloves luxuriate as they do in the wood in question. The land is somewhat damp; the trees overhead are Oak, thinly planted; the undergrowth, which is mainly Hazel, was cut down about three years since, thus the Foxgloves have abundance of light, which adds to the freedom in which they grow.—E. M.

— FRUIT PROSPECTS FOR 1889-90.—All round hereabouts Apples and Pears appear to be plentiful. Owing to the heavy rains in May and the heat in June the trees pushed many young growths, but being checked by the subsequent heat and drought the growths are short and studded with b'ossom buds. A good spring in 1890, together with the absence of the devastating caterpillars, which the birds appear to have cleared, a heavy crop may be expected. The cold spring prevented early nesting amongst the birds, hence the caterpillars wrought the mischief before the nestlings were forward. The hedge sparrow is the gardener's friend, but the law is not strict enough for its preservation.—W. T., *Blantyre*.

— THE WEATHER IN JUNE.—W. H. Divers, Ketton Hall, Stamford, writes—"A few days, from 6th to 11th, were showery and dull; the remainder of the month was bright and beautiful summer weather. The 5th was the only clear day, but the 26th and 27th were clear for the greater part. Wind was in an easterly direction twenty-one days. Total rainfall, 0.73 inch, which fell on eight days, 0.35 of which fell early on the morning of the 7th, with a heavy thunderstorm. Barometer steady. Highest 30.50 at 9 A.M. on the 5th; lowest 29.72 at noon on the 2nd. Highest shade temperature 83° on the 2nd; lowest 43° on the 16th; Lowest on grass 41° on the 1st, 16th, and 18th. Garden spring running 30 gallons per minute on the 30th."

— THE NAMES AND SYNONYMS OF BRITISH PLANTS, by Geoffrey Egerton Warburton, B.A., is a pocket volume that will find favour with the British botanist. It is stated to be an attempt to make the difficulties of botanical nomenclature somewhat less, whilst it may at the same time point out what perplexing confusion exists, not only in the names given to various plants, but also in the rank they should take as species, sub-species, or varieties. The list contains the names of every plant considered as a species by the best authorities. Mr. Warburton has done his work faithfully and efficiently, and we highly commend it to British botanists. It is published by Messrs. George Bell & Sons. If we could only induce publishers to place the titles on the backs of all their books what a convenience it would be!

— REFERRING to the FINE SUMMER, the *Standard* says:—"If it has been a good season, so far, for the farmer and the husbandman, it has been equally kindly and favourable to the horticulturist and the private owners of gardens. If people complain that anything has failed in their gardens this year they may depend on it that—leaving out of account the ravages wrought by the caterpillars in the spring—the fault lies with themselves, or at any rate with those they employ. Just as everybody was beginning to say, 'We shall want rain shortly,' down it came; and, most obligingly, a considerable proportion of it has fallen during the night time. Perhaps we ought to allow, in order to be strictly accurate, that people who are very fond of their Roses would willingly have waited another week before the dry weather broke. But though the rain may have slightly shortened the heyday of the first bloom of the Roses, it will greatly benefit the second bloom. You cannot have it all round, as the phrase is. Without the rain the Phloxes, that will soon be in beauty, would have turned brown at the bottom of the long stalks, and everybody who has a garden of his own and watches it lovingly knows what that means. The Sunflower during the last few days has been growing almost with the rapidity of the Prophet's Gourd. How precious, too, has been the rain to the growth of the Rhododendrons, preparing them thus to do their duty next year. Nor must we forget more homely, but not less necessary, accompaniments of an agreeable life. The rain that dashed the Roses and finished the Foxglove has swelled the Gooseberries, ripened the Raspberries, and prolonged the Strawberry season. The dripping July clouds lay the dust and fill the larder. The gentle downfall has washed the honeydew off the Green Gages, plumped out the Peaches and the Nectarines, and would have developed the Apples had there been any to develop. But, alas! it will be, in most places, a bad Apple year. The wood ripened imperfectly last autumn, and the blossom, though fair to see at the time, has not fulfilled the promise of May."

— WOLVERHAMPTON SHOW.—At the great Horticultural Show which opened at Wolverhampton on Tuesday the following are a few of the leading prizes awarded, and a full report of the Show will appear next week. Sixteen stove and greenhouse plants (open), not less than eighteen in bloom.—First, Mr. Cypher, Cheltenham. Second, J. Marriott, Esq., Coventry. Mr. Cypher was also first for six exotic Ferns, six plants in flower, and six Palms. For a group of plants in 140 square feet and 100 square feet Mr. W. H. Dyer, gardener to Mrs. Marigold, Edgbaston, Birmingham, was the chief prizewinner. For forty-eight Roses (open).—First, Messrs. Cranston & Co. Second, Messrs. Harkness & Sons. Thirty-six Roses (open).—First, Messrs. Perkins & Sons, Coventry. Second, Messrs. Cranston & Co. Third, Messrs. Harkness & Sons. Twenty-four Roses (open).—First, Messrs. Perkins and Sons. Second, Messrs. Cranston & Co. Third, Messrs. Dicksons, Limited. Twelve dark Roses (one sort).—First, Messrs. Cranston & Co., with Alfred Colomb. Second, Dicksons, Limited, with Horace Vernet. Twelve light Roses (one sort).—First Messrs. Cranston and Co., with La France. Second, Messrs. Dickson & Co., with Merveille de Lyon. The Mayor's prize of five guineas for the most meritorious exhibit in the Show, was awarded to Mr. Cypher, Cheltenham.

— PLUMS IN FRANCE.—Plums constitute a produce of great importance, and it may be interesting to point out the extent of their culture in France. In the first place comes Lot-et-Garonne with 175,000 cwt., valued at 12,000,000 francs. The fruits of this country are very much prized. Next comes the Deux-Sèvres, supplying 98,960 cwt., worth 2,000,000 francs. The production of the Loiret is about 53,500 cwt., valued at 270,000 francs. That of the two departments of Aisne and Seine-et-Marne amounts to about 40,000 cwt. The 37,000 cwt. of Seine-et-Oise have a value of 48,000 francs, the production of Meurthe-et-Moselle amounts to 34,000 cwt., and it varies from 24,000 to 14,000 cwt. for the departments of the Aube, Haute-Saône, Meuse, Vosges, Tarn-et-Garonne, Haute Marne, and Seine-Inférieure. These figures relate to the year 1885. The total of the harvest in France has risen to 752,000 cwt. Moreover, as the quality of the fruit varies considerably, the variations in price are also great. The price of the hundredweight, which was 68 francs in Lot-et-Garonne, was only 20 francs in the Deux-Sèvres, from 42 francs in the Tarn-et-Garonne, and in fine from 4 francs 50 cents for the Haute Loire. There is certainly the material for supplying a considerable commerce.—(*La Nature*, June 29th, 1889.)

— NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.—The usual monthly meeting of the Nottinghamshire Horticultural and Botanical Society was held at the Arboretum Rooms, Nottingham, on Thursday evening last week, when a large number of members attended. In addition to money prizes being offered to any meritorious exhibits by the Society, Messrs. R. Sankey & Son of Bulwell Potteries, Nottingham, who take a great interest in the Society, offered special prizes for the best six Coleuses, the best six Gloxinias, and the best six exotic Ferns, which caused a healthy competition in each of the classes. The exhibits were tastefully arranged in the large corridor, and during the evening about 2000 of the general public were admitted free. In the class for six exotic Ferns C. J. Cox, Esq., Basford (gardener, Mr. Meadows), carried off the principal honour; W. H. Farmer, Esq., Alexandra Park (gardener, Mr. Attenborough), being second. The class for six Coleuses were well represented, Mr. W. H. Farmer being first with well-coloured examples, the Sheriff of Nottingham, John Robinson, Esq. (gardener, Mr. Plumb), being a good second. Gloxinias were well shown, seven good lots being staged, the principal honours falling to Mr. T. Hallam, Dr. Powell, and Mr. James Booth respectively. Amongst those who sent plants and flowers, not for competition, but which received the Society's awards, were C. J. Cox, Esq., who staged a large and nicely arranged miscellaneous collection of stove and greenhouse plants, Orchids, &c. W. H. Farmer, Esq., sent a massive *Cyathea dealbata*, and a collection of stove and greenhouse cut flowers. Messrs. J. R. Pearson & Sons, Chilwell Nurseries, set up a large and varied collection of herbaceous flowers. J. Wesley Lewes, Esq., Hardwick House, Nottingham (gardener, Mr. Walker), contributed a fine collection of cut Gloxinia flowers. Mr. C. J. Mee, Wollaton Hall Gardens, an excellent collection of fruit and vegetables, very noticeable amongst which were some well-grown Muscat of Alexandria Grapes, highly coloured Peaches, and several varieties of splendidly well-kept Apples. Dr. Powell showed a magnificent dish of Strawberries (James Veitch), which received the Society's certificate of merit. Mr. Frank Yates, seedsman, Nottingham, sent handsome examples of his new Lettuce, Yates' Champion, which received a large share of attention from the visitors. The meeting in every respect was

a most successful one, and Mr. Steward, the indefatigable Secretary, is to be congratulated upon the able manner in which he carried out the arrangement of the Show.—J. H. W.

RASPBERRY HORNET.

AS was stated in the report of the Royal Horticultural Society's meetings last week, the Fruit Committee inspected several varieties of Raspberries established in the gardens at Chiswick, and unanimously recommended that a first-class certificate be awarded for the variety under notice. It arrested attention by its free growth and large clusters of fruit—in these respects surpassing Prince of Wales and others growing in the same square. The fruits are large, somewhat pointed, pale red in colour, and very firm. A cluster is represented in the engraving. The variety, it appears, was obtained in France many years ago by the late Mr. Rivers; and although it has always been regarded as the best

to trace debility which puzzled me in one or two instances to root disturbance to these industrious and insignificant looking creatures. It seems to me that the nests of the ants are not to be detected by any elevation in the ground. One can only discover them accidentally; at least this has been my experience.

Notwithstanding the dry weather, Roses which have been carefully syringed and duly watered are making an excellent display. I have never enjoyed mine more either in form or colour, and the size has been equal if not above the average.—A. M. B.

SYRINGING VINES.

I DO not think this practice is so common now as it was at one time. "Syringe daily from the time the Grapes are formed until they begin to colour," is advice I find general in Vine growing instructions twenty and thirty years ago. Now it is, "If you want to have the bloom perfect do not syringe after the Grapes are thinned," and the question is, Which practice is the more beneficial? I am in favour of syringing.



FIG. 6.—RASPBERRY HORNET.

variety at Sawbridgeworth it has not been pushed into notice but sold with others in the ordinary course of trade. Judging by the well-established plants at Chiswick this Raspberry is a good grower, bearer, and traveller, qualities that entitle it to be regarded as useful for general cultivation.

ANTS AND ANEMONE FULGENS.

I HAD possessed for several years a well-established clump of *Anemone fulgens*, but this spring I counted in vain on its graceful foliage and brilliant blossoms. The foliage came up weak and thin. At last it was represented by a solitary leaf, flower buds there were none. One day last week, on digging for a root or two with a view to investigation, I discovered that the ground which should have been as usual represented by *Anemones*, was entirely occupied by the nests of the small red ant, all traces even of the roots of the *Anemones* having vanished.

I have found many similar nests in my garden, and am inclined to think that the small red ant and the small black ant are both equally noxious neighbours, and must do much mischief burrowing amongst the roots of flowers and of Roses. At least I am now with certainty able

I know syringing will tarnish the bloom a little in some cases, but if syringing is done with water free from all impurities it is astonishing the small impression it will make on the Grapes even if syringed up to the time they begin colouring. Tarnishing the bloom is the only harm that syringing can do to Grapes, while the benefits derived from it are clean healthy Vines, and a satisfactory exemption from all insect pests.

It is well known that thrips, red spider, and green fly abhor water, and the free use of it on any plants will invariably prevent their gaining a footing, or if they have already done so it will annihilate them; and what is of equal importance, mealy bug cannot resist the application of the syringe. I do not say that to begin syringing Vines when they are well stocked with mealy bug would cause the pest to quickly disappear, but I assert that if Vines on which mealy bug is known to exist are syringed from the time they are started into growth until the fruit commences colouring the bug will be almost invisible the whole time, and after syringing is discontinued it will fail to make any headway or increase to an objectionable extent. After trying every known remedy for this pest I would sooner depend on the hydropathic treatment to stay its injurious progress than anything else.

There are, however, various ways of syringing, and some do more harm with it than others. We have seen those using the syringe apply the water with such force as to make every berry in the bunches

shake, and by degrees the leaves become ragged and cut round the edge. This system is a mistake, as it injures the Grapes and leaves, and does not keep the insects so much in subjection as a gentle but thorough saturation of all parts of the Vine.—A KITCHEN GARDENER.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 433, last vol.)

THE street cry of "Cowcubmers," very familiar to all dwellers in towns, carries us back nearly three centuries, when the name was not only pronounced thus, but written to correspond, which seems to throw a doubt upon its derivation from the Latin *curvus*, because its fruits are apt to be crooked, as some old authors say. In order to get straight Cucumbers they used in the seventeenth century to put the fruit while small, into a long tube (presumably of paper or wood), by which means they lengthened it and kept it from curving. Gerarde, in 1596, had announced that a Cucumber plant having been taught by art to produce straight fruit, might be expected to prove the parent of plants which would not need their fruit treated in this way. Another old gardener found fault with the Cucumber because it was of too moist a nature, and he advised that the pits in which it was grown should be partly filled with absorbents, such as chaff or chips, to make the plant grow drier. These early pits were only covered with mats stretched over hoops. Forcing under glass does not seem to have been successfully carried out till the reign of George I., when Fowler of Stoke Newington astonished the world by producing fine Cucumbers on New Year's Day, 1721. Stimulating the growth of plants by the application of dung or other manure is a practice so old in England that its commencement cannot be dated; but no attempt at forcing plants by greenhouses or stoves seems to have been made till about the middle of the seventeenth century, but there were a number in use a few years after the Restoration.

The list of Cromwell's actions is not complete if we omit that he took an interest in gardening and agriculture, as also did several of the leading men amongst the Puritans. It was one of the singular incidents of the notable year 1649 that a sect arose whose doctrine it was that the majority of mankind ought to betake themselves to the primitive pursuit of cultivating the ground, and a number of them set to work near Cobham, Surrey, planting roots and sowing Beans on waste land; but seeing their views tended to a dangerous socialism the Council of State had to disperse them, and the new scheme collapsed. Samuel Hartlib, author of several tracts on husbandry and editor of one written by an aged clergyman whose name is unknown, in which the extensive planting of fruit trees was earnestly advised, was one of the Protector's friends. During the Commonwealth he received a pension of £100 yearly, and this tract in particular led to the formation of orchards in many English counties. Some consider that the important Apple orchards of the Midlands had their origin at this period. Hartlib had amongst his friends the clever but unfortunate man Plottes, of whom little is known, except that he died in a London street by want of food. His quarto book, the "Art of Planting, Grafting, and Gardening, with a Perfect Platform of a Hop Garden," printed about 1640, contained much valuable matter; probably it was not much read owing to the near approach of the Civil War. In 1654 he published his "Expert Gardener," a curious book with illustrations, but compiled from continental works. It had a good effect on both gardening and agriculture, especially by its explanation of Flemish methods. He had been preceded, however, in this work by Sir R. Weston, who had brought out some ten years before a pamphlet on the pursuit of husbandry in Brabant and Flanders, as it had fallen under his own observation. Our English gardeners of that century were, it appears, lacking in method and in perseverance. One valuable practice he originated was the cutting of green crops for fodder, which had not before been thought of in this island.

The two Tradescants, father and son, are closely connected with the progress of horticulture in the seventeenth century, as introducers of many exotic species; also they were the possessors of a memorable garden at South Lambeth, part of the site of which is now occupied by a brewery of large repute. An old house called, I believe, Turret House, only removed a few years since, was said to have been once the abode of the Tradescants, or "Tradescins," as their neighbours perverted the name. A succession of authors have persistently asserted that the elder Tradescant was a Dutch emigrant, but recent inquiry establishes the fact that this is an error, as he was of English parentage. John Tradescant is stated to have been, when a young man, gardener to Lord Treasurer Earl Salisbury; subsequently he became a traveller, searching for rare plants. His first explorations were in some of the cold regions of Russia; afterwards he visited the Mediterranean Isles and some places in North Africa. In 1629 he was appointed gardener to Charles I. The post, however, seems to have been honorary, as

was probably Parkinson's also, who was styled the king's herbalist. It was during the reign of this king that Lambeth, which had till then retained its natural wildness, and the marshes of which yielded a variety of plants to the herbalists, began to pass into the hands of the gardeners. Asparagus had no doubt been cultivated for many years before Gerarde's time, for he speaks of it as no novelty, and observes that the native plant could be so improved as to almost equal those imported from abroad; but the 'Sparagus Garden at Lambeth is the first locality with which this vegetable is distinctly associated. Somewhere near, between that place and Vauxhall, Melons also were freely grown on the moist soil, and the elder Tradescant, who had no doubt frequently rowed across from Westminster to Lambeth, chose out a spot on the higher ground for what became a renowned experimental garden. Here the Scarlet Runner was first grown in England, the seeds having been brought from South America in 1633. Its flowers were used for nosegays, and the plant itself only regarded as an ornamental trailer, till Miller, in the next century, showed that the pods might be advantageously cooked and eaten. Yet the gardeners who preceded Miller knew this was a species of Bean, and it has been supposed there was a superstitious prejudice against the pods as food because the blossom is blood-coloured. But the good folk of two or three centuries ago had some curious theories; thus, for instance, one of the earliest named varieties of the Pear which was grown about London, the Warden, was reputed to be "good to quench choler." Hence, as a modern author remarks, a present of a basket of these to a friend might be really valuable if the Pears acted on the mind through the body and convey besides a delicate hint.

There seems to be a doubt whether the Apricots brought from Algeria by Tradescant, sen., were a new variety merely, or the first samples of the fruit known in England; probably it had been introduced before. Both father and son obtained seeds and slips by their own researches and the help of friends, which made the South Lambeth garden so rich in new plants that a catalogue of these was printed by Tradescant, jun., for the benefit of gardeners and botanists. A genus of plants in the Spiderwort group is named after the Tradescants, and an Aster which was introduced by one of them. It has been asserted that Tradescant, jun., was the man who obtained the first exotic Ferns when he visited Virginia in 1628. The species he brought are said to have been *Adiantum pedatum* and *Cystopteris bulbifera*. During the time of the Tradescants there were plantations of Vines and Hops at Lambeth, of which a memory yet lingers in local names. After the death of Tradescant, jun., a poetic epitaph was put up to the honour of both, in which allusion is made to them as cultivators of the Lily and the Rose. Nearly a hundred years later a deputation from the Royal Society went to investigate Tradescant's old garden, and discovered some descendants from the plants which he had been the means of introducing to English cultivators.—J. R. S. C.

ROYAL BOTANIC SOCIETY.

FLORAL FÊTE, JULY 15TH.

To celebrate the Jubilee of the Royal Botanic Society's existence the Council some time ago decided to provide its Fellows and the public with an attraction of a novel character, and quite a departure from the conventional exhibitions with which all are now so familiar. Borrowing an idea or two from continental celebrations, such as the battle of flowers at Nice and similar events, it was resolved to hold a "Floral Parade and Feast of Roses" in the Botanic Gardens at Regent's Park, at which medals and prizes would be offered for carriages and other conveyances, horses, and ponies most tastefully decorated with flowers; also for wreaths, garlands, arches, with groups and baskets of Roses. The latter portion of the exhibits were placed in the large marquee; but the carriages, &c., were in the gardens, and despite occasional showers the weather proved fine enough to enable the "parade" to be seen to good advantage.

An extremely large and fashionable company assembled in the afternoon, and by 5 P.M., when the Royal party arrived, consisting of the Prince and Princess of Wales, with their daughters, the Duke and Duchess of Teck, Princess Victoria of Teck, Prince Christian, and the Earl of Fife, there was a dense crowd of visitors on both sides of the broad walk from the conservatory to the entrance. A parade had taken place earlier in the day, but the principal event was that at five o'clock, though many who had not secured places had to be contented with a very imperfect view of the procession. Considerable difference was manifested in the style of decoration adopted and the taste displayed, but several charming carriages and chaises were shown, Mrs. E. Ledger taking the chief honours (the Princess of Wales's prize, value twenty guineas, and the Royal Botanic Society's gold medal) for a bright and effective decoration, in which yellow and orange flowers predominated, Coreopsis and African Marigolds furnishing the prevailing tints. N. Sherwood, Esq., had (first prize) a small phaeton or chaise liberally adorned with Roses and other flowers; and C. Sharman, Esq., contributed a similar vehicle, driven by one of his daughters, which attracted much notice, and received second prize. Mr. J. Chard had a

small conveyance adorned with Marguerites and Poppies, other competitors being Mrs. and Miss Gilbey, Miss Ada Bell, Mrs. Bryant, and Mr. W. Goldsmith. In one case La France Roses were employed almost exclusively and with good effect, while in most instances Roses were used for the wheels, giving them quite a kaleidoscopic appearance as the carriages were driven past at a smart pace. Few horses or ponies were sent, but most of these were tastefully adorned with flowers in wreaths and chains. Upon the lake were one or two boats florally decorated, but most of the other outdoor productions were very unsatisfactory.

Within the great marquee the groups of Roses from Messrs. W. Paul and Son, Waltham Cross, which were arranged on the five central banks in graceful scrolls, bands, and beds, the colours contrasting or harmonising charmingly, were the chief feature. Large numbers of blooms were employed, and the style adopted was a most welcome attempt to break away from the monotonous exhibition methods generally adopted. A large gold medal was awarded. Messrs. Keynes, Williams & Co., Salisbury, also had a pleasing contribution in the shape of a Rose bower, consisting of two arches, crossing at the apex, and with a central column, Reynolds Hole and Niphetos Roses being chiefly employed with admirable effect. Extensive groups of Rose blooms were shown by Messrs. Rumsey and Frank Cant, and it was a surprise to many to see such fresh substantial flowers thus late in so trying a season. There were not many baskets of Roses arranged for effect, and these were nearly all too heavy, the best being one containing La France Roses and Cissus discolor sprays from Mrs. M. H. White (silver medal).

Of miscellaneous groups and collections a group of Tuberous Begonias, Ferns, and Palms from Messrs. Laing & Co., Forest Hill, was one of the most tasteful. This firm have proved abundantly how well these Begonias can be grouped if a little care and thought are exercised. A central basket of the handsome drooping single variety pendula was most telling. Groups of Orchids came from Mr. B. S. Williams, Upper Holloway (silver medal), and Messrs. Low & Co., Clapton (bronze medal); Crotons from Mr. Offer, Roses and Poppies from Mr. R. Miller, of Shoreham; Ferns from Mr. H. B. May (silver medal); and Gloxinias from Mr. W. Grundy (silver medal); so that the marquee was well furnished.

In response to the invitation of the Secretary the majority of the lady visitors wore Rose wreaths and sprays, and there must have been a heavy demand for flowers that morning, and some of the florists had been busily employed in furnishing so many thousands of tasteful productions.

TABLE PLANTS AND GLOXINIAS.

Two short papers on the above subjects were read by Messrs. Tranter and Collier at the last meeting of the Sheffield Floral and Horticultural Society. The following are some notes of both papers:—

TABLE PLANTS.

Tastes differ in the selection of plants for table decoration. Among the best for this purpose are small Palms, and it is generally admitted that the lightest and most elegant in growth are the most suitable. Palms are raised from seed, and can be bought of any required size from nurserymen. Other suitable plants for tables are Crotons, Dracenas, Aralias, and Pandanus, all of which strike readily from cuttings. Plants of the two former that are too large for the tables may be cut down and the tops inserted in a mixture of light loam, leaf mould, and sand, and placed in a propagating case in a stove, keeping them close for two or three weeks and sprinkling occasionally. When the old plants have thrown out side shoots sufficiently long these may be taken off and treated in the same way as the larger cuttings. The best time for propagating Dracenas and Crotons is May or June. It is of great importance to never place table plants in too large pots; 6-inch are large enough, and with the aid of a little liquid manure the plants may be grown of the size required. The narrow-leaved Dracenas are the best, and in all cases they should be confined to a single stem; anything approaching a bushy habit renders them too heavy.

Pandanus are increased chiefly from side shoots, which the plants produce very freely, particularly when kept well syringed. Good varieties of table plants are Pandanus Veitchii; Crotons Lord Wolseley, Warreni, and aigburthensis; Dracena terminalis; Aralias regina and Veitchii. Plants suitable for amateurs who have only a cool greenhouse are Grevillea robusta and Aspidistras. The Aspidistra is one of the best of room plants, the foliage remaining in good condition in a dry atmosphere. It does well in ordinary loam, and is increased by division of the roots. The Grevillea may be raised from seed, also from cuttings, but it is difficult to strike except in a strong bottom heat, such as that afforded by a hotbed.

GLOXINIAS.

Gloxinias rank among the finest of summer flowering plants. There is sufficient diversity of colour among them to suit almost everybody. They are very easy to grow, though not altogether amateurs' plants, for at all times they require heat. There are many ways of raising them—sowing seed, dividing old tubers, and striking the leaves. Seed should be sown in January to have plants in bloom the same year. Prepare a well-drained 6-inch pot, and fill it with fine sandy soil, having among it a little peat, also fine. As the seed is very small it should not be buried but sown on the surface, gently pressing it down with the bottom of a flower pot. In a moist atmosphere and a good bottom heat the seedlings will appear in about a fortnight. When ready to handle transfer them an inch apart into pans filled with light sandy loam and peat. Return them to a stove or early vinery, the latter being an excellent place. Do

not allow them to become drawn or they never make fine plants. When they have made four or five leaves pot in 60-size pots, and subsequently transfer to 5-inch, and with good culture they will make fine plants the first year. At all times they must be kept very near the glass, almost touching; and if gradually inured to the sun from the beginning it is astonishing what a great amount they will endure. I have grown plants suspended from the roof, and they have had a very pretty effect, particularly with drooping varieties. After blooming I usually place ours in a cool frame, gradually withholding water, then the old leaves soon change. I then place them out of doors, laying the pots on their sides in wet weather. The winter treatment during rest consists in housing them in any place free from much damp, but, on the other hand, it must not be too dry or the tubers will fail. Some shake them out of their pots and winter them in cocoa-nut fibre refuse, but I find no better plan than keeping them in the same pots they flowered in.

To have a succession start the first tubers in January, following at intervals to March or April. When the tubers have started into growth they should be shaken out of the old soil, and repotted in fresh in smaller sized pots. If increase of stock is desired large tubers may be divided, having a break to each portion of tuber detached. Another method of increase is by the leaves, which may be cut or nicked crossways on the under sides, and placed flat on any moist medium in a warm temperature. Tubers will develop from nearly every cut. The leaves may also be cut with a portion of stem attached, and rooted round the edges of pots like ordinary cuttings.

The Chairman (Mr. F. Hardy) remarked on the method of growing Gloxinias without shade, saying he had grown them close to the glass from beginning to end without any shade, and found that they did very well. This method also keeps the plants dwarf and sturdy, and the drooping varieties do not drop their blooms so soon as they generally do when grown in shade.



SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY.

THE quarterly meeting of the above Society was held at the Museum Hotel, Orchard Street, Sheffield, on Wednesday evening, July 10th. The chair was taken by Mr. J. G. Newsham, who opened one of the most successful and most numerous attended meetings ever held, by introducing to the members Mr. W. Tunnington of Liverpool, who was received with the greatest enthusiasm, and it may be safely said that never within the annals of Chrysanthemum growing in Sheffield was the visit of any authority on the cultivation of the flower more eagerly anticipated.

Mr. Tunnington, on rising, said he proposed dealing with the Chrysanthemum in many of its stages, and would therefore describe his paper in general terms as:—

ON CHRYSANTHEMUM CULTURE.

Mr. Tunnington proceeded: It will be remembered by most of you that I strongly advised cultivators, if possible, to avoid what is known as the May bud, and in order to accomplish this, I must direct your attention to the old stools after flowering, and the striking of the cuttings. This bud is due in most instances to not looking after the plants well between the time of flowering and the time the cuttings are ready for insertion. The stools should be carefully watered and kept near the glass in a cool structure where frost cannot reach them. This will induce the formation of strong cuttings that have the appearance of vigour about them. If striking is delayed until November or December for Japanese, and a few late flowering incurved (the principal batch of incurved to be inserted during January and February), I maintain that cuttings derive more benefit by being left on the old plant during the dark days of December and the early part of January than they do when inserted in pots stood in cold frames and "hang about" for weeks.

If the cuttings are placed in a gentle bottom heat, and never allowed to flag, they will root quickly and grow at once with freedom. One question should present itself to your mind, and that is, "Why avoid the May bud?" If stopping is recommended, that is a natural question, and one arising out of the foregoing remarks. For some time it presented to me some difficulties, which were only overcome by experience and observation. But to come to the question, "Why avoid this bud and then stop the plant?" Where is the difference? It is simply this: it is not merely wasting time, but the formation of the bud practically paralyses the plant for a time; this bud forces the laterals from every leaf down the stem of the plants, which checks the plant more than the removal of a small portion of the top. The formation of the bud causes the stems to harden more than I consider good for the well-being of the plants in this early stage of their growth.

CHANGE OF CUTTINGS.

There is another point of importance which influences this matter and one that should not be lost sight of—viz., a change of cuttings.

When plants are grown on what I call the high pressure system, for such it is, and blooms of exhibition quality are produced, the constitution of the plant is enfeebled, its whole energy is concentrated into the building up of wood and the development of a fine bloom. The result is that cuttings are in many cases very sparingly produced, and often then they are only of the most puny description. A change of cuttings is a decided advantage, not for the mere sake of a change, for no advantage would be gained by having cuttings from a friend who had subjected his plants to the same high-class cultivation. The cuttings obtained should be from plants that are grown for ordinary decoration, grown well, but not on the exhibition principle. Plants grown for decoration generally yield plenty of cuttings, and those if well looked after usually grow stronger and make better plants during the season than the weak cuttings that have often to be depended upon from plants that have been grown strongly for some years.

EARLY STRIKING—THE MAY BUD.

What advantage is gained by early striking is a question well worth the consideration of every grower, and one that must be duly considered if we are to get the right sort of bud at the proper time. If early striking possesses advantages of such importance as some growers maintain, I have failed to perceive them; but on the other hand I have been able to note the disadvantages that attend such a course of treatment. By early striking the cuttings are "hanging about," and their small stems gradually become hard, the result of this treatment being only too visible in May by the production of a flower bud. If the cutting is a good one to commence with, and the plants produce a bud in May, it is due to a check in some stage of growth. Cuttings propagated from plants that have been too long under what I have termed the "high pressure system of cultivation," show this bud generally towards the middle of May. I may say in passing that my plants, or at any rate a portion of them, are showing this year earlier than they usually do—namely, the first week in June, and from what I have seen with other cultivators the same sort of early bud formation is common with all. We do not apprehend much difficulty from this, as our plants are in good condition at the roots. Although it checks the plants for a time most probably these plants will not show another bud until August, or what I may term the proper time for securing the buds.

TAKING THE BUDS.

I do not care to take any before 20th August, except a few that are known to be late varieties. The plan we adopt is to take the points out of the plants when we observe too early bud formation taking place. In some cases three or four good breaks will be observed a few inches down the stem of the plants, and when this occurs we remove the top of the plants down to those breaks, which somewhat reduces the height of the plants. We have always topped some of the plants of the same family in May, and allowed others to grow in a natural way. This results in the buds being produced at different times. If cuttings have been rooted at the time advised, and grown without a check, those not stopped will usually grow on one stem till the middle of July. This is what we term the July bud. This bud is no use for producing flowers for exhibition. It is the growths that spring from the base of this bud that produce the best flowers. You will by this treatment—that is, topping some in May and allowing others to grow on in a natural way—have a better chance of getting the right timed bud. It is not unusual to see blooms produced by this topping process of quite a different character on the same plant. The cultivator is sure to hit the mark with some of them. Some will show a bud early in July. Those should have their shoots removed by degrees.

THE SECOND JOURNEY.

About the middle of the month the whole of these plants will require attention, as I have found this the best time to put them in what I will call their second journey. This is done by removing all the shoots that are not required to carry a flower; at the same time examine those that have not actually shown their buds. In some cases small growths will be showing from the axils of the leaves; any plants that show these laterals should have the point of the plant removed at once, as by so doing quite a fortnight will be saved. This is the time to throw all the vigour possible into the plant. If left to take its own course it would come too early on the one hand or too late to run on to get a bud other than a terminal, which is useless in the north for exhibition purposes unless the season proved an exceptionally fine one, whilst in the sunny south it would make a good bloom. If the plant is in good condition at its roots, and is well furnished with foliage, it will produce another crown bud, intermediate between the crown and the lateral. The leaves on the stem of this bud follow up so close to the flower that when expanded the guard petals rest upon the foliage. This is the bud I always find produces the bloom possessing all the qualities a first-class flower should have, and such as will make the cultivator's heart rejoice when he comes to cut the flower. I have adopted this plan for years, and have always found it a good one. This especially applies to the incurved section; at the same time I may name some of the Japanese that can be got to the proper time better by this stopping process—viz., R. Broeklebank, Meg Merrilies, Boule d'Or, Yellow Dragon, Val d'Andorre, Gloriosum, Belle Paule, Grandiflorum, Fair Maid of Guernsey, Baron de Prailly, Triomphe de la Rue des Châlets, and many others. If those plants are pinched at intervals from the middle of May until the middle of June there will be less difficulty in securing a bud that will expand with freedom; if not

topped they are liable to show too early, and only produce coarse hard-centred buds. If this bud should prove worthless the shoot on which it was produced is lost, as the next bud will be too late to be of any service. It has long been understood that Eve and Mabel Ward require topping to get them to produce a bud at the proper time, which is quite true, but I go further than this, and top some of each variety that we grow.

AUGUST BUDS.

Some plants will show buds too early in August. In this case you must use a little judgment. We allow the small growths that spring from the base of the bud to extend for a time. They must not, however, be allowed to grow to the extent of robbing the bud too much, or you will lose it, but pinch one part of a shoot one day and so on just sufficient to ease the bud. I am now speaking of the top shoots. Those lower down the stem can be left to take care of themselves until you can perceive the bud swelling, and it has attained the size of a large pea; even then do not remove all the shoots at once, but by degrees. There is another matter worth noticing in some of the strong growing Japanese, especially when they show rather early. A strap leaf will appear on the stem of the bud; this leaf will sometimes grow to the extent of robbing the bud so much as to spoil it, therefore this leaf should be gradually removed. Another little matter: as soon as we have secured the bud we supply (once or twice a week if the weather is hot) some tobacco powder from a puff to the points and buds of the plants, I think this a great preventive against the attack of yellow thrips, which are always lurking about at this time, and often destroy the bud whilst in an embryo state. This cannot readily be perceived at the time, but it is too often the cause of deformed flowers when the blooms expand.

FEEDING THE PLANTS.

When last with you I omitted one important ingredient from the compost I advised you to use—viz., charcoal. That sold by nurserymen is excellent, but for years we have been in the habit of preparing our own from the refuse that remains after the Pea stakes are dressed, the branches that blow from trees, and any prunings that we are able to collect; a 10-inch potful of this is used to each barrowful of soil. This keeps the soil open and in a healthy condition, an important matter if the plants are to root with freedom. If a sound compost is used very little feeding will be needed before the close of June; in fact, up to the 20th no feeding has been done. We then commence giving the plants weak liquid manure once a week from the farmyard.

TOP-DRESSING.

At the end of the first week in July we top-dress the plants by filling up the space that was left in the pots when the plants were placed in their flowering size. The material we use is the same that I advise for the first potting. Feeding by the aid of liquid should be discontinued for a fortnight or so, while the roots take possession of the new soil. We again top-dress in September, and this time we have to exceed the limit of the pots. The pots are filled level full of soil, the same as we use for potting. We then get about a bushel of fresh cowdung, and add to this a peck of night soil, or the same quantity of fowls' or pigeons' dung, and as much dry soil as will, when well mixed together, make the whole about the consistency of mortar. We then get two old bricklayers' trowels—large knives will do just as well—and commence to form a rim on the outer edge of the pot, and about an inch or so on the soil inside the pot. The rim will then be 1½ inch or a little more through, and if it is made about 1½ inch high, will hold sufficient water for the plant. It is not only necessary to enable the cultivator to water the plants properly, but it is also acts as a good stimulant to them, for the water and autumn rains carry down to the roots the fertilising ingredients that it contains. Feeding by the aid of liquid from the farmyard should be carried out carefully and judiciously, as very often autumn rains keep the soil too wet for the well-being of the plants, and applications of liquid cannot be given them without adding to the evil over which we have no control. By rich top-dressings the plants are largely independent of the water pot. I think I told you in autumn last how valuable I had found the liquid from an undrained closet. This we use at intervals of two or three days. For instance, we water with liquid from the farm, then give clear water for two days, then resort to that from the closet, when the next application is required. Another good liquid, and one that the Chrysanthemum enjoys, is made from the following: A bushel of cow or sheep manure and one peck each of soot and lime, mixed together, tied up in a sack and placed in a hogshead of rain water. If the bag is squeezed and knocked about in the tank the liquid will be fit for use in about two days, and it should be diluted with three parts of water, increasing the quantity of liquid as it becomes necessary to fill up the tub. Hen and pigeon manure tied up in the same way make an excellent stimulant.

SOOT AND CHEMICAL MANURES.

During wet weather, when stimulants in the form of liquid cannot be administered without the risk of saturating the soil, soot may be sprinkled on the surface. It acts quickly, and imparts to the foliage a fine dark hue. We have tried the majority of artificial manures that are sold in the market, such as Clay's, Beeson's, Standen's, Amies', and Thompson's; perhaps the last is as good as any of them. We apply these on the same principle as the soot during showery weather, and no doubt occasional applications of these patent manures, used with care, promote activity at the roots. At the same time I wish it to be under-

stood that if the weather should be hot and dry instead of showery, we prefer using the liquids previously named, as they are of a cooler nature.

Sulphate of ammonia and nitrate of soda are very dangerous, and should be applied with considerable caution. Any plant that is late, or has been topped late, will be pushed forward quickly if a pinch is given on the surface whilst raining—that is, if the cultivator has no better method of using it. I prefer putting a 6-inch potful into the hogshead when the other liquid is getting weak, and it is quite safe used in this manner. I continue using liquids until the blooms are cut, discontinuing only for a short time when the plants are first housed.

The tops of the pots will be found to be a complete network of white healthy roots to the last, but strong stimulants in the last stages of growth should not be given—in fact, in no stage of growth, as it is much better to apply them weak and more frequently, as the plants derive more benefit than from occasional strong doses, and there is no risk of injurious results following. My advice on feeding the Chrysanthemum is to keep on the safe side, for over-feeding will bring the plant to a standstill for a long time, a quantity of the lower foliage will fail, and it is a question if the cultivator can get the plants right again during the season.

SYRINGING.

Another matter we practise is syringing the plants three or four times a day during hot weather; in the morning about ten, and again at noon, and often twice afterwards, and I am certain that the plants enjoy this treatment, for they are impatient of the burning sun and hot dry air, especially after a few dull days. This frequent syringing prevents the plants showing signs of distress, which they would quickly do by the enormous evaporation taking place from their stems and leaves.

WOOD RIPENING.

I do not think this of much importance. If there is such a thing as wood ripening I should be glad to know how it is done. All I have found necessary is to let the sun and light reach the stems of the plants on all sides. If we are to place such importance on this ripening process how do the trained plants that are grown about Liverpool produce such fine blooms when they are trained half-cone shape, and the foliage completely covering the stems of the plants throughout the season? yet those plants produce blooms of such excellence that would do good service on first class stands. How does the wood ripening in this case come about? For my part I fail to see it. I have been convinced for a long time that the secret lies in taking the bud at the proper time, and leaving the ripening to take care of itself.

SECURING THE PLANTS.

I advise one stake to be placed to each pot, the shoots to be slung to this and allowed to sway loose, and also a line of tar twine to be strained to posts (the height at which the line is to be placed can be judged according to the variety), higher in the middle of the row, and sloping down to each end. When the growths have reached 6 or 8 inches above the line they should all be tied at equal distances to it, which is much better than tying them to laths as some cultivators recommend. If the shoots should grow to the extent of needing further support they should again be slung to the stake above the line. I find this simple way of securing the plants handy at the time of housing, as the line can be cut, and as all shoots are secured to the stakes the plants can be quickly moved.

MILDEW.

If mildew has attacked the plants, which is often the case at this time, they should be laid on the ground and thoroughly syringed on the under side of the foliage with the following mixture:—A 3-inch potful of sulphur placed in a four-gallon can of rain water, and two wineglasses full of lemon oil, or a piece of soft soap about the size of a walnut. If the soap is boiled for ten minutes with about a quart of tobacco water so much the better.

HOUSING THE PLANTS.

In placing the plants in the house we select those most advanced and place them at one end, where shade can be given if the weather should be bright, and the late ones in a house where heat can be applied if it should be needed. When the plants are accustomed to their new quarters the whole should be fumigated with tobacco smoke, for it is very difficult to destroy green fly when they establish themselves in the base of the petals. I have observed the plants "sulk" after housing, owing to the loss of night dews to which they have been accustomed outside, so we give all the air possible, and syringe the plants two or three times a day according to the weather. Feeding is also stopped for a few days. It will be noticed that the plants come to a standstill for a short time. It is therefore best to keep the foliage damp, and to let them have pretty well their own way for a few days.

BLOOMS DAMPING.

This is a most perplexing thing, and one that will not be readily fathomed. I have often heard it attributed to over-feeding, but I fail to see how this comes about. Over-feeding practically paralyses the roots of the plants, and they cease to convey to the bloom the food necessary to develop it. This is often the cause of a bloom half expanding, and then refusing to fill up in the centre. I have for the purpose of over-feeding or gorging, if I may be permitted to term it, set plants apart for this purpose. The first effect is the lower leaves curling and turning brown at the points, and in the end they decay

and fall off. The flower will throw out a row or two of petals, but will never expand. If the damping evil is caused from the roots, how is it that a plant with three or four flowers on it, one will damp and the others not? I attribute damping to the gases that are carried in the air in foggy and damp weather which settle upon the petals. The evil is done when two or three dull days are followed by the sun shining bright for an hour or so. I have observed it is always after this kind of weather that we lose our flowers; rarely, if ever, have I experienced damping if the weather is at all frosty.

No doubt some of you will have had some experience in using stable manure. When used too fresh and highly charged with ammonia in a Peach house when the trees are in flower, the bloom is destroyed and not a fruit will set. Again, if used in a house where Adiantum Ferns are growing, if the house is closed all the young fronds will be destroyed in one night, and I do not see why the same sort of thing should not take place in the flower of the Chrysanthemum; and if sulphate of ammonia be sprinkled on the surface of the pot, and watered in, and the house closed, you will have the house reeking with ammonia, and this is no doubt one great cause of the evil, as the ammonia condensing on the petals of the flowers will be only too visible the first sunny day by holes being burnt in them. I am of opinion that if this damping is caused from the roots the petals would be affected at one end or the other, and not in the middle. I think we shall have to look to atmospheric influences rather than blame the Chrysanthemum for being such a gluttonous plant as to destroy its own flower through over-feeding. To illustrate what I have said regarding atmospheric influences, I once had a number of plants fully expanded in an outhouse, the door was opened to show some visitors the flowers, although only for a short time; the result was in a few days all the flowers at the front were lost. It has, therefore, since been my practice to give no more air than is necessary during damp weather, and to have just sufficient heat in the pipes to keep the air in circulation—the temperature between 40° and 50°; 5° or 10° more may be given for a short time to bring up those plants that are late, but it is not well to subject the opening flowers to too much heat for long, or it will spoil the colour and cause the petals to reflex. Plants that have the flowers fully expanded, and it is desirable to keep them for a short time, may with safety be placed in a dark dry outhouse.

In conclusion, it is better to be a little early than late at show time, remembering that the bloom can be kept for a time either cut or on the plants. I often see flowers staged at some northern shows before the centre is grown out, which greatly reduces the blooms in height and sadly militates against the exhibitor's chance of success.

Mr. Tunnington was, on the motion of Mr. Newsham, seconded by Mr. Ledger, and supported by Messrs. Eadon, Jarvis, and cordially thanked for his paper, the several speakers pointing out how especially valuable were the speaker's remarks, from first to last the interest in them being thoroughly sustained.

GOOD HARDY FLOWERS.

It may be of more than passing interest to some at least of your readers to know which are the most useful and showy plants used in flower in the hardy herbaceous beds and borders, but as these are far too numerous to give in detail I will merely cite the best for general decorative purposes.

POLEMONIUM RICHARDSONI.

For some time past this has been sending forth its second crop of flowers this year; nor does even this exhaust its flowering, for when this is over a third will soon appear, a fact alone which should render it extremely popular. It dies nearly to the ground annually, but commences growing early in spring, and soon the lovely azure blue spikes of flowers are produced. These in the first flowering are usually not more than 10 inches high, and while these are on the wane another batch may be seen springing up, and these usually attain to 18 inches high, the flowers assuming an exquisite shade of sky blue of a much lighter tone than in the first flowering, the increased sunlight having probably something to do with this change. The plant is readily increased by division at any time when not flowering, preferably after the first spikes fade.

GAILLARDIAS.

These are now in their fullest beauty, and are quite unique in the rich colouring and variety of their flowers. Perfectly hardy and wonderfully profuse in their flowering, and withal of the simplest culture, these qualities should gain for them admission to any garden. The forms of *G. grandiflora* are those which give the best results, and being true perennials need only once planting. These, like the biennial varieties, are easily raised from seeds, while those who have only small gardens and but little time and convenience for raising plants from seed, may like to know that plants of the above in great variety, either separate or mixed, can be procured from dealers in hardy plants.

ENGLISH IRISES.

English Irises are also making a great show just now, and their handsome flowers are so charmingly adapted for vases or general decorative purposes that no garden is complete without them. Many of their flowers are so quaintly beautiful as to defy description. Being bulbous in character their planting must be deferred till the autumn, taking

care to give them a warm sunny position in light sandy well drained soil. A similar position and soil also suit the Spanish Iris, which are rather earlier in flower. Therefore it is desirable that both groups should be represented, and thereby embrace a greater period of their flowers.

LYCHNIS FULGENS AND L. HAAGEANA.

These provide quite an array of colour, such as crimson, scarlet, vermilion, orange scarlet, and white, and therefore constitute a highly effective group of dwarf perennials among early summer flowers. In height they are not more than 15 or 18 inches, and a single tuft will in a good season and fairly rich soil produce as many as a dozen spikes of richly coloured blossoms. They prefer a dry warm place in winter, and are well suited for the front row of a sunny border, where they soon form compact tufts. The individual flowers are much larger than is the case with most of the members of this genus, and are nearly 2 inches across, being produced in terminal and axillary clusters. Few plants are more strikingly beautiful at this time than these, and being easily grown from seeds deserve far more attention than they at present receive.

LILIUMS.

The noble group of hardy plants is well represented just now, prominent among which are the forms of *Thunbergianum* and *davuricum*. Specially fine in the first named is *alutaceum*, a lovely little gem about 9 inches high and rich apricot coloured flowers, a most delightful plant for pot culture, while in the latter we have *citrinum*, a charming light orange in colour, with broadly expanding blossoms on stems nearly or quite 2½ feet high. There are plenty more really good Lilies in both sections, but those named are exceptional colours. *Croceum* (the Orange Lily) is as fine as ever and very telling, and so is the pure white *candidum*. Happily, thus far the disease which carried off this Lily in such quantity a year ago does not appear so badly, though it exhibits itself in some other species. The only way to keep it down is to pick off the affected portions and burn them at once. If left alone it not only disfigures the growth, but is highly detrimental to the bulbs.—J. H. E.

HORTICULTURAL SHOWS.

PORTSMOUTH.—JULY 9TH.

THE Portsmouth Chrysanthemum Society hold a general exhibition in the summer for assisting local charities in the town—a laudable object, and with a patronising public, low prices of admission, and careful management the Committee have been able to hand over handsome sums to the hospitals and deserving causes. Although a three-days show to some extent prevents competition a good representative exhibition is annually produced. The third day generally proves the best in point of attendance, hence justifies the plan adopted. The Victoria Park was, as usual, the site chosen for the Exhibition, and being close to the railway station serves the public and exhibitors alike well. The exhibits were arranged in two large marquees, the specimen plants down the centre of one, and the groups arranged around the sides of the tent made a pleasing display. The other tent contained the softwooded plants in the centre, while on side tables were arranged the cut blooms, fruit and vegetables. As is usual at the Portsmouth shows, whether they be held in the summer or in the autumn, good order prevails, Mr. Power, the courteous Hon. Secretary, being generally found where the work is going on, and he is ably supported by the Assistant Secretary, Mr. B. Miller.

PLANTS.—The principal class was that for twelve stove or greenhouse specimens, not less than six to be in bloom, for which the sums of £15, £10, and £5 were offered. Three competitors staged, making an excellent display. Mr. J. Cypher, nurseryman, Cheltenham, was an easy first; although his specimens were not the giants he is accustomed to show they were large enough with their high quality to win easily. The more noticeable in his group were *Latania borbonica*, the picture of health; *Croton Queen Victoria*, fully 6 feet in diameter, well furnished, and splendidly coloured, *Ixora salicifolia* with good trusses of bloom, *Erica Parmentieriana* freely bloomed, *Ixora Williamsi*, *Statice profusa*, and two *Allamandas*, *Hendersoni* and *nobilis*. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was second with healthy specimens of *Statice profusa* fully 5 feet across, *Clerodendron Balfourianum* very fresh, and a healthy well-coloured plant of *Croton Queen Victoria*. Mr. F. Mould, nurseryman, Pewsey, Wilts, was third with good flowering but weak foliage plants. £5 was offered as first prize for four stove or greenhouse specimens, not less than two to be in bloom. Mr. Currey, gardener to Col. Pepper, Milford Hall, Salisbury, was first with healthy well-grown examples of *Kentia Forsteriana*, *Croton Prince of Wales* and *Allamanda Hendersoni*. Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., M.P. Leigh Park, Havant, was a good second, a well trained and freely flowered plant of *Rhynchospermum jasminoides* being noticeable as well as a highly coloured specimen of *Croton interruptus*. Mr. H. D. Hawkins, gardener to E. Bishop, Esq., The Lawns, Swanwick, was third.

Miscellaneous groups arranged for effect constituted a feature of the Show, seven competing. Mr. Wills was a good first, the plants employed being of the right kinds, while the taste in arrangement was all that could be desired in the space, 10 feet by 8 feet. Narrow-leaved well-coloured *Crotons*, *Cocos Weddelliana* Palms, *Eulalia gracilis*, and Maidenhair Ferns, sufficiently brightened with *Hydrangeas* and *Orchids* prevailed in the group. Mr. Penford was second with a taller arrangement, in which *Vanda suavis*, *Souvenir de Malmaison* Carnations, and

Maidenhair Ferns figured largely. Mr. T. J. Short, nurseryman, St. Edward's Road, Swansea, was awarded third honours for an arrangement which displayed too much close packing of the plants. Effective groups were arranged by competitors in the class, 8 feet by 6 feet, open to Portsea Island only, the best coming from Mr. Hatch, gardener to the Victoria Park Committee. Second Mr. J. Burridge, North End Nursery, Portsmouth.

For three specimen Palms, to be not less than 6 feet high, Messrs. W. & J. F. Legge received the premier award for large old varieties. Mr. Wills second with varieties possessing merit, and in good condition. Mr. Cypher was third. Mr. Penford led the way with one specimen Palm, showing a large one of *Latania borbonica*, Mr. Wills depending upon *Kentia Belmoreana*, for which he received second honours. Mr. Curry was third. Four entered for three Ferns, the stipulation being that they should not be more than 5 feet high. Mr. Wills was first with healthy plants of *Davallia Mooreana* and *Microlepia hirta cristata* as his best plants. Mr. Penford followed closely. Mr. Hawkins was third. The first two exhibitors were placed in the same order for specimen Fern, both showing *Cibotiums*, one spectable, and the other regale. With a freely flowered neatly trained plant of *Erica jubana* Mr. Cypher led the way for a single specimen flowering plant, being followed by Mr. Penford with *Statice profusa*, and Mr. Curry with *Allamanda grandiflora*. With finely coloured *Crotons*, *Sunset* and *Johannis*, Messrs. Cypher and Wills were placed in that order for a specimen foliage plant. *Fuchsias*, *Pelargoniums*, *Cockscombs*, and *Begonias* were creditably shown by Messrs. Hatch, Hawkins, and Burridge. *Coleus* were represented by large pyramidal-trained plants from Mr. H. C. Gale, gardener to Alderman G. E. Kent, Stubbington Lodge, Portsmouth. Mr. Wills had the best table plants—light and neat. For six *Gloxinias*, both in the open class and that confined to Portsea Island only, there was brisk competition, and it was a remarkable fact that in both cases the first prizes were carried off by a dockyard carpenter—Mr. J. Rouse, Durham Street, Southsea.

FRUIT.—The principal class was that for six dishes, Pines excluded. Two only competed. Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough, was first, staging fairly good Black Hamburgh Grapes, a very fine Hero of Lockinge Melon, good Brown Turkey Figs, and Royal George Peaches. Mr. Penford was placed second, Stirling Castle Peaches, Lord Napier Nectarines, and Penrhyn Castle Melon being his best dishes. For three bunches of black Grapes Mr. W. Tait, gardener to General Napier, Oaklands, Cosham, was awarded first place with medium-sized bunches and fairly coloured large berries. Mr. Inglefield was second with the same variety. White Grapes call for little or no comment, being of moderate quality only. The best green flesh Melon, Hero of Lockinge, was staged by Mr. Inglefield, who took first honours. Second, Mr. Woodfine, gardener to Captain Boyd, Emsworth. The best dish of Peaches was shown by Mr. Inglefield—Royal George in good order, large and highly coloured. Mr. T. Wilkins, gardener to Lady Theodora Guest, Inwood House, Blandford, was second. Mr. Woodfine took first honours for a dish of Nectarines with Elruge, while Mr. Penford had Lord Napier, both being in good order.

VEGETABLES.—These made quite a show in themselves, so numerous were they exhibited. Eight entered for nine sorts, in which two of Potatoes were allowed. For first honours there was a close contest, the premier award falling to Mr. Inglefield, Early London Cauliflowers, Green Globe Artichokes, Canadian Wonder Beans, Trophy Tomatoes, and Sutton's Seedling Potatoes being all good. Mr. Wilkins was second with good Potatoes, Onions, Peas, and Tomatoes. Mr. W. Tait was third. Excellent Tomatoes and Cucumbers were shown in the classes set apart for them, Mr. Inglefield in the former, and Mr. O. Arkell, gardener to A. J. Shinner, Esq., Caller House, Swindon Road, Cheltenham, in the latter class, took the awards for good produce.

CUT FLOWERS.—Hardy flowers in twelve distinct bunches were staged well, the best coming from Mr. B. Ladhams, florist, Shirley, Southampton, who gained the highest award; Mr. R. H. Guy, Palmerston Road, Southsea, being second. For twelve bunches of stove and greenhouse a good display was made, more by the quality than the number of the exhibits. Mr. Penford was easily first, and Mr. Guy second. For both bridal and hallroom bouquets Messrs. F. Perkins and Son, Coventry, were easily first; Mr. Cypher followed in both classes. Messrs. Ewing and Co., South View Nurseries, Havant, had a good collection of cut Roses and shrubs on view, and Mr. B. Ladhams staged a group of hardy flowers not for competition.

TEDDINGTON.—JULY 10TH.

THE Teddington Royal Horticultural Society held a most satisfactory Show last week in the grounds attached to the residence of W. Howard, Esq., The Grove, and this gentleman, who is one of the Vice-Presidents of the Society, also most generously threw open his picturesque and well kept garden to the visitors. The morning was extremely wet, and the prospect seemed to be hopeless, but happily the Committee and their courteous Secretary, Mr. Simmonds, were rewarded for their efforts by a most agreeable change about mid-day, the afternoon and evening proving fine enough to induce a good attendance of visitors. The Show itself, which occupied four large tents, was one of the best the Society has ever held both in number and quality of exhibits, and the only defect was that insufficient space had been provided. The tent devoted to plants and groups might have been half as long again with advantage both to the exhibitors and visitors. There is evidently a considerable amount of vigorous enthusiasm in the Teddington Society, and much of

this is due to the substantial support, in every sense, which is accorded by the gentlemen residing in the district.

The groups of plants in competition were some of the most tasteful we have seen this season, and they would have well merited considerably more space. Mr. E. Coombes, gardener to W. Furze, Esq., Roselands, was first in the amateurs' class, Mr. Fordham of Twickenham leading in the one open to nurserymen, Messrs. Bishop, Buckland, and Reeves securing other prizes. Mr. Munro, Cambridge House Gardens, Twickenham, was first for six stove and greenhouse plants, followed by Messrs. Reeves and Bates, Messrs. Munro, Reid and Bates also taking the prizes for fine-foliage plants, while Ferns and Caladiums were shown by Messrs. Piper, Bishop and Gregory.

The tent devoted to floral decorations was well filled with tasteful productions, numerous excellent stands being shown, but the most artistic of all was a basket of Cattleyas, Adiantum fronds, and Asparagus plumosus sprays from Miss Howard, which deservedly won the first prize in the class, although a basket of Carnations and Gladiolus Colvilli from Mrs. Fulcher was greatly admired and very tastefully set up. Fruits were represented by good samples from Messrs. Bates, Osman, and Waite, the last named being also the leading exhibitor of vegetables, which were extensively shown both by gardeners and cottagers.

The non-competing exhibits comprised a handsome group of Begonias from Messrs. Laing & Son, a group of Orchids from Messrs. Puttock and Shephard, and a group of Orchids from Messrs. Page & Son, all excellent contributions.

ROYAL CALEDONIAN.—JULY 10TH AND 11TH.

THE last summer Show held under the auspices of the above Society was in connection with the National Rose Society's Provincial Show in 1887, when the financial result was a loss. This year the Show extended over two days, both wet, but no doubt there will not be so great a loss as on the previous occasion. The Show was an extremely thin one, there being a painful deficiency of plants. Roses, however, were both numerous and fine, fruit in larger quantity than in previous years, and to vegetables the same remarks will apply.

In the chief plant classes for nurserymen two firms only competed—Messrs. R. B. Laird & Son and Messrs. Ireland & Thomson, to whom first and second prizes were respectively awarded. The finer Crotons and other plants in the premier collection contributed materially to the success of the former firm. In the gardeners' section the first prize for a table of plants went to Mr. Fraser, gardener to R. B. White, Esq., Ardarroch, for an arrangement of which Orchids formed a strong feature. Mr. Grossart, gardener to J. Buchanan, Esq., was second for a much neater table, and Mr. McIntyre, The Glen, Innerleithen, third. Mr. Grossart had the best four Orchids, Mr. Fraser taking second place for these. Mr. Patterson, Millbank; Mr. Grossart, Mr. McIntyre, Darlington, and Mr. McIntyre, The Glen, were the chief prizetakers for stove and greenhouse plants, Heaths, Ferns, Crotons, Dracenas, and others. Herbaceous plants were shown by Messrs. Munro & Ferguson, Portobello, and Mr. Gordon, Falkirk, to whom the prizes were awarded in the order named.

As already stated, Roses were numerous and good. The first prize for forty-eight blooms went to Mr. Hugh Dickson, Belfast; the second to Messrs. J. Cocker & Sons, Aberdeen; and the third to Messrs. D. and W. Croll, Dundee. For twenty-four, Messrs. Cocker were first, Messrs. Croll, second, and Messrs. Smith & Sons, Stranraer, third. Her Majesty, Mrs. John Laing, Merveille de Lyon, Silver Queen, Marie Verdier, and Lady Mary Fitzwilliam were to be found in fine form in the above stands. For twenty-four Teas Messrs. Croll were easily first with very fine blooms, and Messrs. Cocker second. For twelve trusses of Roses there was good competition, Messrs. Croll being again first with bunches of fine Teas, Mr. H. Dickson second with H.P.'s, and Messrs. McGreedy and Son, Portadown, third. For twelve new Roses, Messrs. Smith and Sons were first, Silver Queen, Caroline d'Arden, Lady Alice, and Gloire de Margottin being distinct. Mr. Dickson was second. For twelve white Roses Messrs. McGreedy were first with Merveille de Lyon. For twelve crimson Roses Messrs. Croll won with Mons. E. Y. Teas. For twelve of any dark Rose Mr. Dickson was first with La Rosière. For twelve of any other colour Messrs. Croll won with Lady Mary Fitzwilliam. In the gardeners' section, Mr. A. Kirk, gardener to J. T. Paton, Esq., Alloa, took the chief honours.

Turning to the fruit there was a particularly fine display, especially of Grapes, Mr. Boyd, Callender Park, Falkirk, securing first for two bunches of Black Hamburgs with large, finely finished clusters; and Mr. McHattie, Newbattle, Abbey, was second with fine examples, much larger in the berry than the above, but hardly so well finished. The first for bunches of white Grapes was secured by Mr. McHattie with good but unripe Muscat of Alexandria. The same exhibitor was also first in the class for four bunches. For a collection of eight dishes of fruit Mr. McIndoe, Hutton Hall, Gnisborough, was first with a good lot, the same exhibitor being also first for a dish of Strawberries with Waterloo, a very dark coloured and taking variety. Mr. McIntyre, The Glen, was first for four dishes of Strawberries, Mr. McIndoe had the best Figs, and Mr. Dow, Newbyth, Prestonkirk, the best Melon, a certificate being awarded to a seedling named Sir D. Baird.

Owing to the very warm summer vegetables were better shown than usual, the number of dishes of Potatoes, &c., being very large and the quality good.

Note must be made of the decorative groups contributed by Messrs. Methven & Son, Princes Street, and by Messrs. Dickson & Co., Waterloo Place, in the latter of which were many stands of florists' flowers.

Messrs. Laing and Mather exhibited numerous stands of Carnations, and Mr. Irvine, Jedburgh, some Delphiniums with spike of extraordinary length.



HARDY FRUIT GARDEN.

THE STRAWBERRY SEASON.—Owners of Strawberry beds in the southern districts have, as a rule, every reason to be satisfied with the return for any trouble or expense taken with them, as in all probability heavier crops were never gathered. All the plants, both young and old, flowered strongly, no frosts crippled the best flowers, and heavy rains fell at the right time, when the crops were swelling. A good mulch of straw litter effectually conserved this moisture, and bright dry weather did the rest. In the more northern counties the prospects at one time were equally as promising, but only about half a crop is being gathered, the drought having seriously militated against them. A well-formed Strawberry bed is very difficult to moisten with the aid of the hose or watering pot, especially when it is located on sloping ground, and these are therefore very much at the mercy of the weather.

THE MOST PROFITABLE STRAWBERRIES.—Wherever Laxton's Noble has been given a fair trial it was found more productive than any other early variety. The quality unfortunately is only second rate, but the fruit being large and of taking appearance sells readily. In any case it is worthy of a place in every collection. For an open position the old Alice Maud has few equals, this being early, very productive, taking in appearance, and briskly flavoured. It does not do so well in close or much-sheltered quarters, but is a good variety for the markets. Sir Harry, another old favourite, is moderately early, remarkably productive, bright red in colour, and of rather acid flavour. On the whole Sir J. Paxton is the best variety that can be grown. It is vigorous, very productive, the fruit being large, handsome, firm, and richly flavoured. As a rule it ripens early and holds out longer than any other. We obtained fine ripe fruit of it on June 18th, and the same plants will yield good dessert Strawberries to nearly the end of July. President, a main crop variety, is a great cropper, and good in every respect. La Grosse Sucrée fails on many soils, but where it thrives it is highly productive, ripening rather early, and the quality is fairly good. James Veitch is productive, attains a great size, the quality, however, being second rate; but it is superior to the still larger Auguste Nicaise. Sir C. Napier is somewhat fickle, and in some gardens liable to succumb to severe frosts. It is a fine Strawberry though, and the acidulous flavour pleases many palates. Dr. Hogg is of neat growth, a good cropper, and the fruit large and of superior quality. British Queen cannot be grown everywhere, but where it does succeed it is the favourite variety, the quality being extra good. In some gardens it can only be grown by planting every season. Loxford Hall Seedling is a fairly reliable late variety, but scarcely so profitable as the heavy cropping large-fruited Eleanor or Oxonian.

LAYERING STRAWBERRIES.—When Strawberry plants are established on good ground not much later than the first week in August they attain a good size before wintry weather sets in, and yield a fairly heavy crop of extra fine fruit the following season. By this it will be seen how important it is that the runners be rooted early. The most common plan is to layer a large number into 3-inch pots, a portion of these, or the best of them, being shifted into fruiting pots, and the rest planted out. This is scarcely satisfactory, and the order of things might well be reversed, extra strong plants not always doing best in pots. Nor do Strawberries always transplant well out of pots, especially if allowed to get dry soon after they are planted. Where the younger beds were freely mulched, first with short and then with strawy manure, a considerable number of strong runners will be found already well rooted into this, and these can at once be detached, lifted with a trowel, and planted. If the work is not too long delayed the plants are bound to do well. Another good plan is to place a flat ridge of good soil midway between the rows of Strawberries, the selected runners being pegged or fastened by stones on this. Being kept well supplied with water the runners soon become strongly rooted, and may then be planted with a good ball of soil attached in their fruiting quarters. Treated in either of the foregoing ways they take more quickly to their fresh quarters than when turned out from pots in a root-bound state. If layered into small pots they ought not to be kept too long in these, but should be separated from the parent plants before the soil is crowded with roots, and be at once planted out.

PREPARING GROUND FOR STRAWBERRIES.—A loose, deep, and it may be rich, root run leads to the production of leaves rather than fruit, and if, therefore, the time-honoured plan of planting on trenched ground is adopted the trenching should have been done last autumn or winter. In all moderately warm localities this trenched ground could have been cropped with Ashleaf or other early Potatoes, these being cleared off in time for Strawberries to succeed them, and by the time they are cleared the ground will have settled sufficiently. All, therefore, that is necessary further is to level and well trample the surface and put out the

plants. Newly trenched ground must be heavily trampled, and even ordinarily fresh dug ground must be made quite firm. Naturally retentive and rather rich soils will grow Strawberries admirably without being trenched. We merely manure and dig the intended site for Strawberries some time in winter, cropping this with Ashleaf Potatoes in the spring. The latter are duly cleared off, the ground being then levelled, trampled, and planted.

REMARKS ON PLANTING STRAWBERRIES.—It is a very great mistake to crowd the plants. Nothing is gained, and much may be lost by it. Every plant, even when fully grown, or before it is four years old, should have a clear course round it, the sun and air thereby reaching the clusters of fruit that ought to surround each clump. Neither crowded nor old plants often pay for the room they occupy. As a rule three crops are ample for the plants to perfect, and even then if the culture is good the two first crops are the most profitable. A breadth should be destroyed and another planted every season. In very cold or extra moist localities it pays to plant on slightly raised beds, these being 6 feet wide and holding three rows of plants, with 2 feet pathways between. As a rule, however, they succeed admirably on the level, the rows being from 2 feet to 30 inches apart, according to the variety. The strongest growers, notably Sir J. Paxton, ought, on strong soils especially, to receive the greater distance, the plants being disposed 2 feet apart in the rows, while the less vigorous growers may be put out in rows 2 feet apart, a distance of 18 inches dividing the plants in the rows. A trowel should be used for planting purposes, and care ought to be taken to well bury the roots, but not the crowns, the soil being firmly packed about the former with the handle of the trowel. All should be kept supplied with water till well established, and there is no reason why either Tripoli Onions should not be sown, or a row of Endive or Lettuce planted midway between the rows of young Strawberry plants.

FRUIT FORCING.

PINES.—*Starting Suckers.*—Those will soon be fit to be taken from the plants which formed the early section of summer fruiterers, and the necessary provision for them should be made at once, so that the plants may have the benefit of solar heat in developing growth for as long a time as possible. The means essential are a fermenting bed in a low damp house or pit, and the heat of the bed should be about 90° at 6 inches from the surface, but a few degrees higher may be allowed at the start, care being taken that it does not exceed 95°. The suckers should be taken from the parent plants and placed directly in 5 or 7-inch pots according to size, and watered once to settle the soil about them. Good fibrous loam torn up by hand without any admixture is the most suitable compost, and should be firmly embedded in the pot, causing speedy root-action and sturdy growth. For a week or ten days the house or pit should be kept rather close and moist, affording shade, but giving but little air, and sprinkling the plants through a fine rose syringe once or twice a day according to external influences. As soon as growth takes place more ventilation with less shade is desirable, the change being gradual until the growth is inured to the sun, when ordinary treatment should be given. The plants must not be allowed to become root-bound, but the growth accelerated as far as is consistent with sturdiness, consequently there must be no delay in shifting into the largest or fruiting pots. For Queens and Black Jamaica the fruiting pots may be 10-inch, and for other sorts 11 or 12-inch, using fibrous loam, but more lumpy than for suckers, adding a sprinkling of half-inch bones, and to prevent worms entering the pots a handful of soot or wood ashes may be spread over the drainage.

FIGS.—*Early House.*—The first crop is gathered, and more moisture in the atmosphere will be desirable; therefore resume syringing twice daily, and sprinkling the house as advised before the fruit commenced colouring. Thin the fruits freely if plentiful, reserving those which are nearest the base of the shoots. Tie in the growths to the trellis as they advance, stopping or removing any which are not required, regulating those retained so that they may receive the beneficial effects of light and air to mature them perfectly. Do not allow the trees to suffer by want of water; those in pots or planted out in borders of limited extent will require water frequently, affording on every occasion some stimulating food, such as guano or other manure. Where crops are ripening maintain a free circulation of dry warm air constantly, which is essential to the Figs ripening perfectly. Trees in pots required for early forcing must not be neglected in syringing occasionally; attend also with regularity to watering and supplying liquid manure.

MELONS.—It is important that the late plants be put out without delay, especially where the means of affording artificial heat is confined to fermenting materials. Sufficient should be used to raise a bottom heat of about 90°, so as to start the plants quickly. In houses as the crops are cleared the plants, if exhausted, should be removed, and preparation made for a fresh start at the earliest opportunity; but if the plants are in good health it is folly to root them out, as they will come into bearing again much sooner than young plants; and if the foliage is kept healthy they will continue bearing as late as it is desirable. When the crop is cut the plants should be divested of most of the old and damaged leaves, fresh growth being encouraged in the place of that exhausted, which should be cut away. The surface of the bed should be loosened, and the soil removed, applying a couple of inches in depth of fresh loam, giving a good watering, and when growth is taking place afford a free application of liquid manure, and treat as for former crops. When Melons are grown upon the continuous system it is well to note that the laterals will grow freely and show fruit abundantly after a few

joints of growth. The flowers after being fertilised will set and the fruits swell freely, so that sufficient moisture only need be accorded to maintain the plants in continuous bearing. Attend to stopping, thinning, tying, or otherwise regulating the shoots, not allowing pressure of work in other departments to interfere with this, or the results will be detrimental.

Successional plants should be earthed up as soon as the roots show at the sides of the hillocks, making the soil firm, being careful that the plants do not suffer by want of water, nor, on the other hand, have it in excess. To plants swelling their fruits supply weak liquid manure occasionally. Maintain a bottom heat of 80° to 85°, and provide a moist atmosphere to growing crops. Syringe freely, except when the fruit is setting or ripening, being careful in the restricted system not to allow one or two fruit to take the lead, but have them all as nearly as possible of one size on a plant.

VINES.—*Scalding.*—This is very common to some Vines, notably Lady Downe's, and in lesser degree to Muscats. Various causes have been assigned for it, but whatever these may be the remedy is very decided—viz., to admit air rather freely, especially in the early part of the day and through the day, with a little at night and a genial warmth in the pipes so as to maintain a temperature of about 70° artificially. It is most prevalent towards the close of the stoning period, a fortnight to three weeks before the Grapes change colour for ripening. A slight shade at this period is advantageous, particularly to Muscats, and during the early stages of ripening, when the weather is very bright, a double thickness of herring nets drawn over the roof lights is of great benefit in subduing the fierce rays of the sun from the middle of June to early August. When the Grapes begin changing colour danger from scalding is usually past; yet Muscats are not then safe, as a sudden spell of very bright weather following a dull and moist period is very disastrous to that part of the bunches directly exposed to the sun's rays, hence the necessity of a keen eye and a ready hand to promptly avert disaster.

Shanking.—Great loss is occasioned by this malady, if it be one. It need not create any great anxiety to cultivators who are careful to build on a solid foundation, as the evil is caused, so far as is known, by suspended root action at the critical period of the Grapes ripening. This may result from various errors. One of the chief is deficiency of ventilation in the early stages, combined with too much moisture, inducing long-jointed growth and thin foliage, or it may be the roots are deep in favourable soil. To avoid shanking properly made borders and well managed Vines are essential, being careful to fully expose the foliage to light and air, allowing no more leaves than can have those essentials, not seeking to encourage root action by a thicket of growth which must sooner or later be removed in quantity, and give a check to the food supplies when they are most needed; yet as much foliage should be allowed as can have due exposure, so that supplies of nutriment may be steadily maintained. Shanking is strictly cultural, and as such avoidable by judicious treatment. Regulate the young growths, adopting the extension rather than the restrictive system where there is room for it without crowding, keeping gross laterals stopped, so as to cause an equal flow of sap throughout the Vines.

THE FLOWER GARDEN.

Propagating Pinks and Carnations.—In many districts a disease which affects this class of plants has either destroyed or greatly weakened both Pinks and Carnations, and there is therefore all the more necessity to raise healthy young plants. The surest way of increasing the stock of Carnations is by layering the strongest or best placed shoots, this being done late in July or early in August; but the Pinks must be principally struck from cuttings or "pipings," and a considerable number of Carnations may also be raised in the same manner. A very little bottom heat is necessary, and if a partially exhausted hotbed is not available it is advisable to form one in a rather cool position with equal portions of leaves and well-prepared stable manure. The frame being duly set on this, and if rather deep, half filled with the shortest of the heating material, about 6 inches of fine loamy sandy soil should be spread over the surface of the bed, and this in its turn faced over with sharp sand. The cuttings ought, where possible, to be slipped off the old stems, and supposing they are not more than 5 inches long only the old lower leaves should be trimmed off, and the rough lower end of the base lightly shortened to a joint, and many of these also will strike. All should be quickly dibbled in about 2 inches apart and rather less than 1 inch deep, and be firmly fixed. After a watering has been given, and the foliage dried again, place on the lights and keep the frame rather close, also shade from bright sun till the cuttings are rooted. The soil must not be allowed to become dry, and not till these are rooted should air be admitted freely. If frames are scarce handlights may be substituted, but only in warm and rather moist districts do the cuttings root freely in handlights or frames without the assistance of bottom heat.

Roses from Cuttings.—In spite of extra pains being taken with the cuttings of hard wood inserted in the open ground late last autumn fewer of them were struck than usual. Own-root Roses are so useful that it becomes all the more necessary to attempt summer propagation. Some varieties can be rooted in the summer that absolutely refuse to grow from cuttings made from the ripened wood in the autumn. Any medium-sized shoot of either Hybrid Perpetuals, Teas, and Noisettes, including the ever popular Maréchal Niel and Gloire de Dijon, is after it has flowered suitable for making into a cutting. It should be cut with a small slice or "heel" of old wood attached, and

be shortened to the third or fourth joint, only quite the lowest leaf being removed. Insert these firmly round the sides of 5-inch pots filled with gritty loamy soil, and give a good watering. They ought then to be set in a close frame or handlights for about ten days, when all should be plunged in a gentle hotbed, being from first to last kept close, fairly moist, and shaded from bright sunshine. When rooted and potted singly into 3-inch pots, they in due course will make capital plants for either pot or open air culture.

Budding Rose Stocks.—In many instances the buds are sufficiently advanced for the purpose of being inserted in either Briar or Manetti stocks. No very great amount of skill is required, young beginners not unfrequently being most successful in their budding operations. Very much in all cases depends upon the state of the stock—that is to say, whether the bark opens freely or not, and it is also of importance that the small shields with bud and much shortened leafstalk attached separate readily from the wood. Details have often been given, and it is scarcely necessary to repeat them here.

Watering Herbaceous Plants.—Most of the herbaceous plants are capable of withstanding a fairly long spell of dry hot weather, but newly formed borders ought now to be frequently and well watered, and if not already done a mulching of either short manure, grass from the mowing machine, leaf soil, or dry fresh soil given. The herbaceous Phloxes are the first to suffer, and these repay for a heavy soaking of water occasionally.

PLANT HOUSES.

Lilium candidum.—For increasing the stock of these plants to be forced another year good bulbs should be procured as early as possible and placed singly in 6-inch pots, or four bulbs may be placed in 10-inch pots. Use for a compost good fibry loam, one-seventh of decayed manure and sand, with about the same quantity of leaf mould as manure. The pots should be well drained, the soil pressed moderately firm, and the bulbs covered about an inch deep. The pots may be stood outside or in a frame; the latter is most suitable if wet weather follows the potting. If bulbs from the open borders are relied upon for forcing they should be lifted directly the flowers fade. The old flower stems can then be cut away, when fresh foliage will quickly issue from the base.

Lilium longiflorum.—Pay attention to the watering of these plants and the variety *Harrisi* after they have ceased flowering until the stems naturally die away. This is the only attention needed at present if the pots are stood outside in a position where they are partially shaded from the sun. Do not allow plants of *L. lancifolium* and others to suffer by insufficient supplies of water at their roots, or the foliage will turn yellow. On the other hand be careful not to overwater them. Weak stimulants may with advantage be given occasionally.

Cyclamens.—Plants raised from seed sown last August should be placed in their flowering pots, 5, 6, or 7-inch, according to the strength of the plants and the sizes they are now in. In potting the soil should be pressed more firmly than before, and may consist of good fibry loam, one-seventh of cow manure and sand. The pots should be well drained, for abundance of water is needed when the plants are growing vigorously. They should stand upon some moisture-holding base and be arranged near the glass in a light airy structure or in cold frames. For ten days or a fortnight they should be kept rather close until they are rooting freely in the new compost, then admit air gradually until abundance can be given both during the day and at night. They will do without shade provided the syringe is freely used several times during the day if the plants display the least signs of distress. Light shade for a few hours during the hottest part of the day will, however, do no harm. Shift smaller plants as they require more root room. Old plants if duly supplied with water will soon commence fresh growth, and may then be turned out, the old soil partially removed from their roots, and the plants placed in the same or a little larger pots. They should then be subjected to the same treatment as the younger plants.

Grevillea robusta.—When these plants are grown under glass they soon become too tall for many forms of decoration. They grow less rapidly if placed outside where they are sheltered from bright sunshine. Seed now sown in heat will afford plants suitable for rooms at a time when the majority of those raised earlier have been destroyed by doing duty in such positions. Plants raised now will only be small on the approach of winter, but they will grow quickly if given stove treatment until just before they are required for furnishing purposes. The leaves are very useful in a cut state, they last well, and for edging large vases are in many positions superior to Ferns. For this purpose it is a good plan to grow a few plants to a large size, and train them against the end or back wall of any light suitable structure.

Salvias.—Whether growing in pots or planted outside, the shoots must be pinched until the middle of next month, or the plants will grow tall instead of remaining dwarf and bushy. When grown in pots liberal support is necessary after the pots become full of roots, or the plants lose their lower foliage. They must be grown in an open sunny position.

Celosias.—Plants for autumn and winter decoration should be placed at once into their flowering pots, which may vary from 4 to 6-inch. Those for the former will be transferred from boxes, while for the latter the plants should be sturdy in 4-inch pots at the present time. Use for potting good loam, one-seventh of manure and a little sand. Press the soil firmer than in the previous potting. Supply the plants with an upright stake each, and encourage sturdy growth by the admission of abundance of air.

Rhodanthes.—Prepare more of these by sowing seed in 5-inch pots. Place the pots in a frame until the seed has germinated, then give the plants full exposure. They will be found very useful for the conservatory in the autumn.

Marguerites.—Stand young plants ready for 5-inch pots on a bed of ashes fully exposed to the sun, and pay attention to the pinching of the shoots, so that the plants will be dwarf at housing time. They soon run up tall if not prevented. Press the soil round the roots as firmly as possible.

Hydrangeas.—Gradually harden those that are rooted, then expose them to full sun outside in the small pots in which they have been rooted. Insert cuttings of lengthened growths singly in small pots, and cover them with handlights in some warm structure. Shade from the sun, and keep them moist until rooted.



IMPROVED QUEEN REARING.

"A LANARKSHIRE BEE-KEEPER," page 528, last vol., asks me to deal with this subject. I have not been able to do sooner. I can only write for a short time now, and though I am improving in health slowly it will be a long time before "I am as I was." I will, however, tell our friend how to raise queens, and if he follows the plan out to the second generation I will guarantee that the bees produced will truly hibernate, or at least as truly as a wasp does, though I shall not have time to explain the matter in this communication.

When your best stock swarms catch the queen, which is easy enough if clipped, and let the bees go back to feed and develop the cells. Towards the eighth day make up your nuclei, which should not be less than three ordinary frames of comb. Now look out for your stock swarming again. When it does give it on the combs, and as soon as settled nicely on them distribute the combs into as many empty hives. This saves much time in looking for the young queens, as the bees on those combs without a queen will quickly begin to go back to the old stock hive, and if they remain quiet they have a queen with them, and being fewer bees, are more readily found and given to the nuclei. Remove all the queens—sometimes six to twenty-five queens may be found, every one of which may be saved, as their presence is easily noted by the bees keeping quiet or going back. The next day the old stock hive will swarm again and the same process repeated. But on no account must the old stock hive be opened to lift a frame. If this is done the cells are chilled and the development of the queen is retarded, resulting in a worthless one. The advantage of sending the bees back is to provide sufficient to keep them warm enough and protect the queens till they are three or four days old, by which time they are fully matured.

But do I hear someone saying I am breeding for the "swarming impulse," which they would like to "breed out?" I do not think for a moment that this will ever be bred out, or at least until bees cease to breed at all; but if persons would like to breed queens from eggs laid by queens not under the swarming fever, or even a queen or two from some other mother, all they have to do is to graft or fix a piece of comb containing the selected eggs into a frame and put it into the stock that has swarmed, and queen cells will be surely started on the eggs. I made this discovery in 1887. It worked well last year, and this year has been a glorious success. Here is what I discovered. "When a stock of bees is under the swarming fever they will rear queen cells while they have an egg or larva in the hive—drone eggs or not—and when these cells mature, though they allow one to hatch, they never allow her to destroy or kill any of the maturing queens. Also, although there may be a virgin queen hatched out, cells sealed, and queens piping, they will still rear fresh ones, even on drone brood, if they have the chance."

Of course such a stock will swarm, but all one has to do is to catch and remove the queens and let the bees go back.

I have also discovered how to throw any stock into the swarming fever and keep it on all the summer, and thus rear queens wholesale in one stock, and have them hatching out daily or weekly just as I wish.

On pp. 33 and 34 "A Lanarkshire Bee-keeper" gives some advice which, though much in advance of what is taught, in my opinion does not go far enough—viz., his advice to take queens "as they creep out of their cells, or are about to do so." This would be at the end of the sixteenth day from the deposit of the eggs. Now, if the bees which have charge of the cells are under the "swarming impulse" they will keep them imprisoned and feed them until the eighteenth day, and no frame of cells should be

lifted up before. It is exciting work after the bees are shaken off to catch the queens as they hatch out.

When just cleared of bees the noise made by the queens much resembles the crackling of burning white deal sticks, and all cells will have a little hole in them, through which the enclosed queens will be thrusting their probosces. But this does not last more than half a minute before some of the queens are creeping out, and if not caught they will take wing or try to kill each another. These must at once be given to nuclei or queenless hives, and all those cells which have no hole in them should be thrown away if good mothers are required, as their development has been retarded during the time the cells have been out of their hive, for though queens would hatch from these cells they would be of inferior quality; they, however, can all be saved by "swarming" the hive and catching the queens in the swarms.

When I reared the two Punic queens sent to our friend—not "Pumice," please—there were about 150 sealed cells. I had nearly fifty queens from them, and some twenty or thirty took wing, or were killed; the undeveloped cells I threw into the waste comb box to melt up for wax. I had more than I required or could find nuclei for. These queens, though one or two days old, are not fit to send a distance, but must be given to good nuclei of at least three combs well covered with bees for two days more; thus it will be seen good virgin queens cannot yet be reared for sale at "tuppence apiece," even if I can get 100 per week from one stock.

Those queens sent to "A.L.B.K." were not selected in any way, and if they have mated to good drones he will be able for once to see bees truly hybernate, though they are natives of a country in which frost and snow is never known, and where the swarming and honey months are in the winter, so that next year he will be able to say whether my way of breeding is any improvement or not on the old plans.

Your able correspondent speaks of the queens being "lively" and trying to conceal themselves. This is just what well bred queens will or should do. One day I was ten minutes trying to find one on a comb that had not twenty worker bees on it, and they were all of another race and colour. She ran round to the other side every time I turned the comb round. A queen quick on her feet is the one to fill the cells with eggs before the workers do so with honey. She never looks extra large when laying. A weak queen always looks large when laying for two reasons—firstly, she does not lay fast enough and the bees stimulate her all the more. The novice seeing such a queen crawling with difficulty on a comb would remark on her being such a "fine one." The queens of my own breeding, though laying upwards of 3000 eggs daily, run about like spiders.—A HALLAMSHIRE BEE-KEEPER.

HONEY PROSPECTS.

WE had up till the 5th July five weeks of fine weather, but too dry for either bees or crops. The latter are languishing for want of moisture, and the former are denied the large flow of honey that they usually gather in fine weather, when the atmosphere and ground are humid. It is too early to anticipate with certainty what the honey yield will be, but it is certain without some rain there will be little surplus, and with it, unless of very short duration, results will be much the same. In some districts we hear of heavy hives and well filled supers, but as yet we have only the former. The season throughout has been peculiar, being so cold and ungenial until the middle of May that bees could not advance, consequently breeding in earnest did not begin until the above date. The Apples, Pears, and Plums were the only flowers, including the Dandelion, the bees could visit. There was no Plane blossom. Fine weather set in with June, and most hives, notwithstanding the previous drawbacks, were well forward, but strange to say the bees are not more numerous now than they were then, owing to their wings becoming worn and tattered. No year passes without a per-centage of loss from this cause, but in no year has there been so much mortality amongst bees, which puzzles the oldest bee-keepers, who cannot account for it.

The fatality usually begins with the appearance of the Charlock, as it has done this year, but whether it is owing to it or not we cannot say, but perhaps owing to the extreme dryness and little honey in the flowers, the bees have extra flying to perform before they can secure loads, thereby wearing their wings sooner than usual.

Although our hives were full of bees long since I did not deem it advisable to super before the 3rd inst. We want now to get a large surplus, a few showers which would benefit crops and bees alike.

MEAD A CURE FOR HAY FEVER.

For some years past I have been subject to severe attacks of what is termed hay fever, but cannot say whether that is a proper

term or not. This year has been no exception to the rule, and I have suffered more than usual. Happening to have some mead beside me I partook of some of it, and derived great relief.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (A Reader).—As the books you mention are not on our list, we are unable to supply the information you desire.

Missing Parcel (Nottingham).—We have received a direction label which has presumably been detached from a parcel that was intended to reach us, but has failed to do so. The label bears the postmark of the town above mentioned.

Seedling Picotees (Job Cox).—The varieties are very good for border decoration, but few, if any of them, possess the requisite properties of high-class florists' flowers; or in other words, they are not equal in merit to the best named varieties.

Melons Cracking (A. C.).—Wednesday morning's letters can only be answered in the briefest possible manner. An excess of water at the roots, or of moisture in the atmosphere, coupled with too late morning ventilation, are the chief causes of the cracking of the fruits.

Sparmannia africana (Salopia).—You have probably been too liberal in potting for inducing early flowering. As the plant is healthy let it remain outdoors, but it may be desirable to shade the pot from hot sun. If the soil in the pot is not very firm make it so with a blunt-ended stick. Do not overwater; still the leaves must not be allowed to flag through drought at the roots.

Insects on Chrysanthemums (Novice).—Perhaps the insects to which you refer as "Jack Jumpers" do not do much harm. Try the effect of syringing with perfectly clear soot water. It may be made as bright as wine by placing a few lumps of lime in it and removing the scum from the surface, and should be of the colour of very pale ale when used in the evening. All you can do is to take the first bud that forms in the end of each branch. These will be crown buds, and under good management should develop into fine blooms. Three branches from a main stem are sufficient.

Clover in Tennis Lawn (E. Wilkins).—We doubt whether you can destroy the Clover without spoiling the lawn. Nitrogenous manures, such as nitrate of soda or sulphate of ammonia, applied at the rate of about an ounce to the square yard encourage the growth of grass at the expense of Clover, but there is the risk of the grass being coarse for a time, then of the lawn eventually becoming thin. We have no doubt several persons would be glad of such a lawn as the one you complain of. New lawns can be made without Clover by sowing a suitable mixture of grass seeds in well prepared soil. The flower you send is a very bright form of *Lychnis Haageana*.

Seedling Carnation (H. D.).—The scarlet Carnation, which you say is of good habit with sixty blooms on a plant layered last year and easily forced, is worth preserving, whether it is distinct from other varieties or not. This can be ascertained by sending flowers to the National Carnation and Picotee Society's Show, Volunteer Drill Hall, Westminster, on the 23rd inst. You may write previously to Mr. J. Douglas, Great Gearies, Ilford Essex, and send him blooms if you wish. It is a decorative variety, and if the plant is vigorous and floriferous it might be useful for affording flowers for market. Those before us have close not split pods, which is a point of merit, but are scarcely fragrant, which is not.

Chrysanthemum Shoots Injured (J. S. R.).—If you had seen the shrivelled state of the small shoots that had been pushed into a small box without a particle of anything to keep them fresh, you would perhaps have been a little surprised. So far as we can see the plants have been attacked with either caterpillars or earwigs, perhaps both, and you should examine them after dark by suddenly turning a light on them. Earwig traps, such as hollow stems, or small pots with hay in

them, should be provided, and examined every morning. One of the stems appears as if punctured by a small weevil, or the injury may have been done by doubling the shoots into the box; no one could be sure on the point, and if you send again please follow our instructions below on sending specimens through the post.

Arranging Houses (J. G.).—A site shaded by trees till twelve o'clock is not suitable for vineries, Cucumbers, and greenhouse plants, as they cannot have too much light, or if shade be necessary it is best afforded artificially. Of the two plans we should prefer to have all the houses span-roofed, with the ends north and south. The vineries being 18 feet long there will be room for two Vines on each side, each Vine having two rods at 4½ feet apart, which will give very much better results than were they closer together. It is immaterial as to the length of rafter; the most important factor is space—due exposure of the foliage to light and air. Of the boilers named it would be difficult to point out the "best," since all are good in heating power, and easily attended to. With plenty of depth an upright form would occupy the least space, but if you cannot make a deep stokehole a saddle form might answer your purpose.

Hoya bella (J. P.).—Although you have failed to see references to this charming flower, it does not follow its culture has not been



FIG. 7.—HOYA BELLA.

described in our columns. Only a few years ago the following appeared, and we think the information is just what you require:—"One of the most charming little plants for the stove is Hoya bella, an umbel and spray of which are shown in the annexed woodcut. It is a diminutive and delicate counterpart of the well-known Hoya carnosa, and like its equally pretty relative, H. Paxtoni, is much better suited than the old species for a shelf near the glass in the stove, as they are both dwarf and compact in habit, with small umbels of flowers. These two species have long been great favourites, and they are, when well grown, invariably admired. Similar treatment suits them both—namely, a compost of loam, peat, sand, with finely broken charcoal and old mortar rubbish pounded, the pots being thoroughly drained. A warm position in the stove is required, where the plants can be fully exposed to the light; otherwise they are liable to become sickly and unsatisfactory. H. bella has been in cultivation more than thirty years, and might be expected to be in almost every collection of plants; but such is by no means the case, for there are many gardens of more than ordinary pretensions where it is not grown. This neglect of a beautiful plant is strange, for when its delicate, wax-like white flowers, with their rich purple central ray, are fully expanded, the plant is unrivalled except by its near relative, H. Paxtoni. The neat trusses of flowers are invaluable for cutting when something particularly choice is required."

If you wish for more particulars on any point we shall be glad to supply them.

Palms and Bamboos (Pat Murphy).—You say you repotted the plants three months ago, yet now ask what soil they want? It would perhaps have been better to have obtained the information before. The plants, however, are not very particular in respect to soil, and grow well in turfy loam of medium texture with a little bruised charcoal intermixed for keeping it sweet and porous. The turf being of a springy nature should be pressed down firmly. With good attention in watering large healthy plants may be grown in comparatively small pots. If the soil gets too dry before water is given the leaves lose colour, as they also do in a very dry atmosphere and under the influence of hot sun. At the same time the earth in the pots must not be kept like a puddle. The Bamboos will be as well in a shady place outdoors as under glass, and perhaps the Palms also; but you do not mention their names. Possibly you do not know them. However, we do not think you will err in letting them remain where they are so long as warm weather continues, taking them in on the approach of chilly nights in autumn. Sprinkle the ashes on whatever the pots stand on frequently, and the vapour arising will be beneficial to the plants.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (N. H. P.).—Campanula rhomboidea. (H. F. E.).—1, Specimen not good, perhaps Chlorophyton orchidastrium. 2, Veronica spicata. 3, Tradescantia virginica.

COVENT GARDEN MARKET.—JULY 17TH.

Trade brisk, with fair supplies of soft fruit. Hothouse goods in less demand.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2 0	to 6 0	Marguerites, 12 bunches	2 0	to 6 0
Asters (Fr.), per bunch ..	1 0	1 9	Mignonette, 12 bunches	3 0	6 0
Bouvardias, bunch ..	0 6	1 0	Myosotis or Forget-me-nots		
Cactus, dozen blooms ..	1 6	2 0	doz. bunches	1 6	4 0
Carnations, 12 blooms ..	1 0	2 0	Narcissus (various) ..	0 0	0 0
doz. bunches ..	3 0	6 0	Pansies, dozen bunches ..	1 0	3 0
Clove Carnations, 12 bunches	9 0	12 0	Pelargoniums, 12 trusses	0 6	1 0
Cornflower, doz. bunches	1 0	4 0	doz. bunches	3 0	6 0
Eucharis, dozen ..	2 6	5 0	doz. bunches	0 0	0 0
Gardenias, 12 blooms ..	2 0	4 0	Pinks (various) 12 bunches	3 0	6 0
Gladioli, per bunch ..	0 6	1 6	Polyanthus, doz. bunches	0 0	0 0
Gladiolus brechenleyensis,			Roses, Moss, doz. bunches	6 0	12 0
dozen sprays ..	1 0	1 6	doz. bunches	0 6	1 6
Iris, dozen bunches ..	4 0	9 0	doz. bunches	3 0	6 0
Lilac, White (French),			doz. bunches	4 0	9 0
per bunch ..	3 0	5 0	doz. bunches	0 6	1 0
Lilium anatum, 12 hms ..	2 0	4 0	doz. bunches	1 0	3 0
Lilium candidum, 12 hms ..	0 6	1 0	doz. bunches	2 0	6 0
doz. bunches ..	12 0	24 0	Spiraea, dozen bunches ..	0 0	0 0
Lilium longiflorum, 12			Stephanotis, doz. sprays	2 0	3 0
blooms ..	2 0	5 0	Stocks, dozen bunches ..	3 0	6 0
Lapageria, 12 blooms ..	1 0	2 6	Sweet Peas, doz. bunches	2 0	4 0
Maidenhair Fern, doz.			Sweet Sultan, ..	4 0	6 0
bunches ..	4 0	9 0	Tuberose, 12 blooms ..	0 6	1 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6 0	to 12 0	Fuchsia, per dozen ..	4 0	to 9 0
Arum Lilies, per dozen ..	0 0	0 0	Geraniums, Ivy, doz. ..	3 0	5 6
Arbor vitae (golden) dozen	12 0	24 0	Hydrangea, per dozen ..	9 0	18 0
Asters, 12 pots ..	0 0	0 0	Lobelia, per dozen ..	3 0	6 0
Begonias, various, per doz.	4 0	12 0	Marguerite Daisy, dozen	6 0	12 0
Caladiums, per doz. ..	9 0	18 0	Mignonette, per dozen ..	3 0	6 0
Calceolarias, per dozen ..	4 0	8 0	Musk, per dozen ..	2 0	4 0
doz. bunches ..	6 0	12 0	Myrtles, dozen ..	6 0	12 0
Christmas Boes ..	0 0	0 0	Nasturtiums, per dozen ..	2 6	4 0
Cineraria, per dozen ..	0 0	0 0	Palms, in var., each ..	2 6	21 0
Dracena terminalis, doz.	24 0	42 0	Pelargoniums, scarlet, 12	2 0	4 0
Dracena viridis, doz. ..	12 0	24 0	Pelargoniums, per dozen	6 0	18 0
Erica Cavendishi, doz. ..	0 0	0 0	Rhodanthus, per dozen ..	6 0	9 0
doz. bunches ..	12 0	24 0	Saxifraga pyramidalis,		
Enonymus, var., dozen ..	6 0	18 0	per dozen ..	0 0	0 0
Evergreens, in var., dozen	6 0	24 0	Spiraea, per dozen ..	0 0	0 0
Ferne, in variety, dozen	4 0	18 0	doz. bunches ..	0 0	0 0
Ficus elastica, each ..	1 6	7 0	doz. bunches ..	0 0	0 0
Foliage plants, var., each	2 0	10 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	2 0	to 3 0	Lettuce, dozen ..	0 9	to 1 3
Asparagus, bundle ..	2 0	5 0	Mushrooms, punnet ..	0 6	1 0
Beans, Kidney, per lb. ..	0 3	0 6	Mustard & Cress, punnet	0 2	0 0
Beet, Red, dozen ..	1 0	2 0	New Potatoes, per cwt. ..	8 0	9 0
Broccoli, bundle ..	0 0	0 0	Onions, bushel ..	3 0	4 0
Brussels Sprouts, ½ sieve	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen ..	1 6	0 0	Parsnips, dozen ..	1 0	0 0
Capsicums, per 100 ..	0 0	0 0	Potatoes, per cwt. ..	4 0	5 0
Carrots, bunch ..	0 4	0 0	doz. bunches ..	4 0	8 0
Caniflowers, dozen ..	2 0	4 0	doz. bunches ..	0 2	0 0
Celery, bundle ..	1 6	2 0	Salsify, bundle ..	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzoneria, bundle ..	1 6	0 0
Cucumbers, each ..	0 3	0 6	Shallots, per lb. ..	0 3	0 0
Endive, dozen ..	1 0	2 0	Spinach, bushel ..	3 0	4 0
Herbs, bunch ..	0 2	0 0	Tomatoes, per lb. ..	0 6	0 9
Leeks, bunch ..	0 3	0 4	Turnips, bunch ..	0 4	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve.. ..	2 0	4 0	Oranges, per 100	4 0	to 9 0
" Nova Scotia and			Peaches, dozen	3 0	12 0
" Canada, per barrel ..	7 0	16 0	Red Currants, per ½-sieve ..	8 6	4 0
Cherries, ½ sieve	4 0	10 0	B'ack	5 0	5 6
Grapes, per lb.	1 0	3 0	St. Michael Pine, each ..	2 0	6 0
Lemons, case	10 0	15 0	Strawberries, per lb. ..	0 3	0 9



FERTILITY.

Now is the time to give especial study to the effect of manure upon the land by close and repeated inspections of crops as they approach maturity. Results are before us; each field of the farm is like the page of an open book, a manual in plain and simple language, telling us as nothing else can do of the condition of the land and of the soundness or the faults of our practice. We may well remind our readers that for land to do this in a reliable manner it is essential that both drainage and mechanical division are efficient. Manure cannot act in a satisfactory manner upon soil that is badly drained or deficient in porosity. Then, too, the manner and time of its application may also affect results. Experimental stations have taught us much about what to avoid and what to use, but they have not given precise information for general guidance, nor can they ever do so.

Sustained fertility of well drained, well cultivated soil, is the essential basis of good farming, and it ought to be the aim of every farmer to apply manure in the most economical and certain manner, so as to insure a full development of each consecutive crop, and never to exhaust the soil. As crops approach maturity we are able to see if we have been successful in this important work, for no matter how unfavourable the season is really good farming always tells. One of the most satisfactory crops we have just now is a fifty-acre field of Barley at a farm which came in hand at Michaelmas, 1887. This is heavy land, and it was then about as full of couch grass as it could well be. Ploughs, cultivators, harrows, and men with rakes and steel forks, were all brought into action upon the grass in spring and early summer last year. The season was too wet for couch fires, and the whole of it was carted off the land into huge heaps, and when the soil was as clean as we could make it, it was manured heavily with farmyard manure in the furrows, and roots sown—Mangolds first, followed by Swedes and white Turnips. The only profit, or rather remuneration, we got for all this work last year was from the sheep with which the whole of it was subsequently folded. But the sheep gave finish to our work by storing the soil with manure. It was ploughed immediately after the sheep were withdrawn. Barley sowing followed in due course, and now an excellent crop of it affords most satisfactory evidence of the soundness of the practice.

On the same farm a field of Defiance Wheat shows we were right in thinking the residue of manure from the dressing given it last year was sufficient to produce a full crop this year. The straw is almost 6 feet in height, and is crowned with such fine ears that the corn yield bids fair to be one of extraordinary abundance. Close by it there are a couple of acres of the new white Salvator Wheat, some of which is 7 feet in height, and about which we hope to have something to say later on. This land will, of course, require a full dressing of manure next season. In other fields, where Barley was sown after Barley, a half dressing of mixed chemical manures was sufficient to prevent exhaustion and ensure a full crop.

Perhaps one of the most remarkable signs of progress is the importance now given to the use of mixed food for animals, and and mixed manures for the land. A recent inspection of the experimental farm at Woburn showed that mixed nitrogenous and

mineral manures ensure full corn crops, while plots dressed only with minerals or nitrates were decidedly inferior. The trials this year are all the more important, from the fact of the weather having been so favourable for chemical manure to take full effect upon the soil. In using chemical manure especial care is necessary to prevent waste, and to ensure speedy action so far as is possible. To apply such manure to the surface without a prospect of rain involves a serious risk of failure; to apply it too soon or too late also points to loss. No matter how wet the season, we were never too early in using it upon pasture of any kind, for the soil is so crowded with roots that the nitrates are taken up as they are dissolved, and the slower action of the minerals is equally certain. Nor do we ever hesitate to use it with spring or winter corn at the time of sowing, if only we know the soil to be of sound staple. Much caution is requisite in using it on very heavy land, for if left exposed upon the surface much of it may be washed away by heavy rain. We repeat, that in the trials of manures greater prominence is not given to sheep folding, for we hold that of all manures used in agriculture the first place must be assigned to that imparted to the soil by sheep folding, both for economy and efficiency.

WORK ON THE HOME FARM.

Ploughs, harrows, and hoes have been kept briskly at work upon all fallow land to destroy weeds and get the summer culture as forward as possible before harvest. Docks and thistles have also been destroyed with other weeds around the margins of corn fields. This work is of special importance now, as such weeds are plentiful enough this year to spread seed far and wide if they are at all neglected. Haystacks have been thatched, and so the best crop in quality and quantity that we have had since 1885 is safe, and much of it will probably be held over till next year, for it is unlikely that we shall have so fine a crop two years in succession. We have upwards of two hundred tons upon the home farm, and have made a special insurance of it apart from the other stock and crop insurance. In doing this we had to remember the possibility of much of it being kept till it became more valuable than it is likely to be next winter, and an approximate value was put upon it. The delicious aroma in the air near all the stacks affords the best indication of that development of flavour by heating which is so essential in good fodder, and the colour is of that bright green hue which is a sure indication of well made hay.

At all our farms we have now a full stock of store pigs coming on for the corn stubbles. For the first few weeks when old enough they had enough corn offal to keep them in a healthy condition, and now they are kept solely upon green peas and beans brought from the fields as required. We do this on the principle that a farm should be self-supporting. A remarkable instance of how well and profitably this may be done came recently under our notice upon a small farm which we surveyed for purchase. It has been in the hands of two brothers as tenants for thirteen years, and during the whole of that time no corn has been sold, but all has been consumed upon the farm chiefly by pigs. The land has thus been well manured, and the pigs sold when ready for the butcher. So well has this answered that the tenants were able to attend the sale in view of becoming owners of the farm. It was with regret that we as representing a large and wealthy landowner had to outbid them, and glad indeed were we subsequently to secure them as tenants.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
		Baromet- er at Sea and Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
1889.												
July.												
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Ir.	
Sunday	7	29.754	63.8	61.0	S.	66.4	73.8	58.8	115.1	54.9		
Monday	8	29.787	57.9	50.9	E.	65.8	64.1	54.5	83.9	51.8	0.189	
Tuesday	9	29.865	65.1	59.3	E.	63.9	74.9	57.9	116.8	54.1	0.184	
Wednesday	10	29.7 8	63.3	60.4	N.E.	65.9	72.5	58.3	104.8	54.2	0.061	
Thursday	11	29.986	64.9	55.4	S.	62.7	71.8	52.6	113.2	48.8	0.010	
Friday	12	29.987	65.9	61.7	N.E.	62.9	73.2	58.8	94.4	53.3	0.360	
Saturday	13	29.914	63.3	61.2	E.	63.0	71.8	59.3	116.0	59.6	0.032	
.		29.857	64.0	58.6		64.1	71.7	57.2	106.3	54.1	0.755	

REMARKS.

7th.—Generally bright morning; cloudy afternoon; fair night.
8th.—Cloudy morning, and spots of rain early; wet from noon to 2 P.M.; showery after noon and wet evening.
9th.—Cloudy morning; fine afternoon, with some sunshine; wet evening.
10th.—Wet morning; sunsh. and showers in afternoon and evening.
11th.—Bright and fresh.
12th.—Cloudy morning; slight thunderstorm at 4 P.M., and wet night.
13th.—Fine, with some sun.
Temperature very similar to the previous week, but its daily range less, owing to cloud and rain. On July 12th, when only 0.06 in. of rain fell here, there was excessive rain in the South Midland counties, upwards of 3 inches falling at some stations.—G. J. SYM NS.



PEACH TREES.

IT is a very common method of culture to throw open the ventilators of the structure in which Peach trees are grown, water the border occasionally, and in other respects to leave the trees practically to themselves until the foliage ripens off naturally; or, prematurely, if the trees are infested with insects. Success may be the result, and undoubtedly is in many instances, but a crop of good fruit under such circumstances is due to chance rather than good management.

It is important that the trees be examined critically after the crop has been gathered, for they may represent three distinct conditions of growth at the very least. There may be shoots too robust to retain their flower buds; others may be in the very opposite condition, too weak with almost colourless foliage, exhausted by the strain of fruit-bearing, and perhaps not the best of treatment; while others will be in an intermediate state, having produced wood of the best quality for yielding with certainty and good management a crop of fruit next year. It will be seen that trees under such differing conditions of growth must not be subjected to the same treatment, or failure in two out of the three cases will follow. It is too late when the foliage falls to check those that are too luxuriant for insuring the retention of the buds when the trees are started into growth. It is also too late to recruit those that are thoroughly exhausted. They, unlike the others, will again bear a heavy crop of fruit, but it will be liable to fall before it is ripe, or if carried until it reaches that stage it will be hard and flavourless, proving of third-rate quality only. This, by good and timely treatment, may be overcome, the vigour of the trees increased, and the quality of the fruit raised to a much higher standard of excellence.

In first and second houses the whole of the old bearing wood and all growths not required for furnishing the trees another year should be at once removed. The foliage of vigorous trees being very large the growths should be severely thinned, so that every ray of light and air can reach the wood to ripen it. This is important, and if it cannot be accomplished by natural means artificial heat must be resorted to. So far we have had a fine season, but trees with strong wood are still far from ripe. During spells of damp weather the pipes must be made warm, having abundance of air on at the same time and a somewhat dry atmosphere maintained. The syringe should be withheld and no more water given than is necessary for preventing growth being brought to a standstill by dryness at their roots. Until vigorous growth has been checked do not shorten any shoots that have extended too far, or in a few days fresh growths will push from nearly every eye. In trees of feeble health there will be no long shoots to shorten, while in those that have made moderate growth any that need shortening may be done during the thinning process.

After the old bearing wood has been removed and the remaining shoots evenly disposed over the trellis the trees should be cleared of insects if any are established upon them. The strong trees are almost certain to be clean, but this may not be the case with those in the other conditions of growth. For red spider the trees should be thoroughly syringed with a mixture of sulphur and water—a 3-inch flowerpotful of the former to every four gallons of water that may be needed. If this is left on for three or four bright days it will destroy the spider as well as any mildew that

may infest the trees. Scale is perhaps the most troublesome insect to deal with effectually; but this may be eradicated by two or three applications, at intervals of a few weeks, of petroleum and softsoap. Three ounces of petroleum may be used in four gallons of water, with half an ounce of softsoap and a piece of washing soda the size of a Cob nut. The oil must be well broken up by the method so frequently described, and before syringing the trees tiffany should be spread over the roof to break the full force of the sun until the oil has evaporated.

To return to the trees of strong growth, if the whole or nearly the whole of the flower buds do not fall, but expand, and to all appearance set well, the growth will take the lead and the fruits fail to swell. One evil is as bad as the other, but perhaps the last is the more disappointing. Trees that are well cared for and only moderately cropped are liable to over-luxuriance, much more so if the soil in which they are growing is of a light instead of inclining to a heavy nature. A trench should be cut at once round such trees, and some, but not too many, of the most active roots removed. All that is needed now is to check them so that the trees will not make soft growth, yet retain their foliage so that the buds can be plumped and the wood as well ripened as possible. If the trees are too severely root-pruned the leaves will flag, and perhaps many may fall, with the result that the buds will remain stationary, and the wood ripen prematurely. The work should be so done that recourse to the syringe is not needed for keeping the leaves fresh. The soil may be returned to the trees without any addition, but if the border is light one or two barrowfuls of dried and powdered clay may be given to each tree according to its size. The trees can then be lifted, and it may not be necessary to cut away many roots, the mere lifting in most cases will prove ample. The soil should be worked well from amongst the roots and the powdered clay incorporated with it as it is returned. Strong trees subjected to this treatment will bear next year and swell the fruit to a good size, and in addition make stout but sturdy wood that will be certain to retain its buds and set a good crop the following season, other treatment being right.

Exhausted trees require the very opposite treatment. A trench should be cut round sufficiently far not to injure one of the roots, working soil amongst them until a number of fibrous roots are laid bare. These should be laid in fresh compost, consisting of rich turfy loam, chopped; if inclined to be light add powdered clay and a little quick-acting chemical manure, a sprinkling of which may also be dusted on the surface, the border well mulched with moderately fresh manure. If trees in this condition are freely syringed and judiciously watered the most valuable ingredients of the manure will be washed down to their roots, which will increase materially by autumn. Next season a marked change will be perceptible in the growth, and an equally satisfactory change in the size and quality of the fruit. When the soil is heavy and trees become exhausted in it the addition of loam of a lighter nature, a little gritty material, or old lime rubbish will prove of much advantage.

Trees in an exhausted condition that have not been lifted periodically are better partially lifted at the present time, and left to make a season's growth before they are dug up entirely. In the meantime they will make quantities of healthy fibrous roots, bear a crop of fruit, and be in the best possible condition for replanting next autumn.

Trees of moderate growth with plump buds and healthy foliage need no special treatment. The old bearing wood removed, the foliage kept clean, the border mulched and watered from time to time, and the ventilators of the house left wide open day and night they will be in the best condition another year; but if the other examples cited were treated in the same manner failure with them would be inevitable.

As a rule, though there are many exceptions, there is too little pruning or thinning of Peach trees in summer and too much

in winter, unless the branches and shoots are left in an overcrowded state.—WM. BARDNEY.

STANDARD MIGNONETTE.

STANDARD Mignonette is not grown to the extent it should be. Good plants are exceedingly enjoyable by their graceful appearance and fragrance, and they continue attractive for a very long time. Having had good experience in growing these plants I will endeavour to impart the details of culture that may be of service to some readers.

Sowing the Seeds.—For producing the best results some should have been sown three weeks or a month ago, but there is still time if no delay occurs for producing good plants. Prepare as many thumb pots as of plants required; sow three seeds in each in loam and leaf mould, and place in gentle heat to germinate. As soon as the seedlings appear watch carefully for any appearance of slugs, and to prevent their depredations shake soot or lime about their haunts. As soon as the plants are large enough to determine the strongest, draw out the others, leaving one plant only in each pot; keep them near the glass, and gradually increase the amount of air to harden and prepare them for a cold frame. I find Miles' Spiral a good variety to grow.

First Shift.—As soon as the seedlings are well rooted they should be transferred to 60's, using for a compost decayed leaf soil and fibrous loam in equal parts with a liberal quantity of sand. When turning the plants out be careful not to disturb the roots more than can be avoided, or the plants will experience a check; place a small stake to each and remove to a cold frame, where they should be kept close for a few days until established. A north aspect, behind a wall if practicable, will be found a suitable place for the frame, which should be filled to within 6 or 8 inches of the top with coal ashes, and as the plants grow the ashes can be lowered accordingly.

Side Shoots.—As the plants grow they will produce side shoots; these should be nipped off close to the stem. When the plants have reached a height of from 10 to 12 inches they will probably be ready for a shift into larger pots, 32's will be found a suitable size; have them quite clean, or the roots will adhere to the sides when turned out at their next shift. A small quantity of dissolved bones may with advantage be added to the soil, which otherwise should be the same as before. Always use it in as rough a state as is compatible with the size of pot. Keep the plants rather close for a few days until established, after which admit abundance of air. As soon as they have attained the desired height—i.e., from 18 inches to 2 feet, allow the top shoots to branch out, and when these require support place them on the trellises.

Final Potting.—In giving the final shift a difference in the compost will be necessary. Two parts loam, one of leaf soil, one of old Mushroom bed refuse, and an eighth of charcoal, with sufficient sand to keep the whole porous, will be suitable. I have heard it said if sand is used in quantity it will add to the fragrance of the flowers, but for the accuracy of this I cannot vouch. In placing on the trellises make them as firm as possible, pushing the stakes well through the soil. Ours are made of galvanised wire after the style of those used for Chrysanthemums, only the wires are placed much closer together. They range in size from 15 to 20 inches in diameter, 8 to 12 inches in depth, with stems from 2 to 3 feet in length. Pots 10 inches in diameter will be large enough; they should be well drained, as Mignonette is very impatient of too much moisture at the roots during the winter. Cover the potsherds with new leaves, or, better still, fragments of fibrous loam, with the fine soil shaken out; pot rather firmly, leaving an inch of space to allow for top-dressing. These are small matters, but essential for attaining success. As the growths extend stop and tie them down, regulating them so as to cover the trellises as evenly as possible. As the days shorten the plants must have a light, airy position near the glass. When they have overspread the trellises cease stopping, and allow them to flower. It will be found necessary to tie the shoots down once more to keep the plants compact and shapely. They will now derive benefit from a top-dressing of soil similar to that used in potting.

Summary.—Mignonette delights in a humid atmosphere during its early stages of growth, but as the weather becomes less dry the plants require less moisture, both at the roots and in the atmosphere, until the flowering period, when they will again require abundance of water. When flowering they are gross feeders, and are much benefited by occasional applications of liquid manure, or the surface of the soil sprinkled with Thomson's Vine manure or Standen's fertiliser, at intervals of eight or ten days. As seed pods appear they must be nipped off; this will prolong the flowering season.

Our plants last in bloom from the middle of February to the first week in June. They should be shaded from hot sun.—NIL DESPERANDUM.

DEATH OF MR. JOHN E. LANE.

THE name of Mr. John Edward Lane of Berkhamsted is one that has been long associated with the progress of horticulture in this country. The contemporary of Rivers, Loudon, Paxton, and many others, he had survived them all, and he, with Mr. Marnock and Mr. John Lee, was left the representative of an age anterior to our own. He now has passed away, having died on the evening of the 17th instant at Berkhamsted in the eighty-second year of his age.

Mr. Lane was born at Berkhamsted, where his father, Mr. Harvey Lane, had previously been a nurseryman. At an early age he exhibited an amount of business capacity and energy which soon began to tell upon the fortunes of what was at that time a thriving though modest country nursery and seed business. By his application to business, and the extent of his enterprise, the little town of Berkhamsted, which it was at that time, was soon too small to occupy the attention of one whose ideas expanded with his growth, and he soon succeeded in having himself associated with some of the large metropolitan houses. As a cultivator he was thoroughly practical, and the direction his mind took was in the study of ornamental trees and shrubs, of which Roses formed a very large part; he was for many years classed among the leading Rose-growers, and his nursery as one of the emporiums of the Rose trade. His name will be perpetuated in the Moss Rose Lanei, as well as in that useful fruit, the Apple, Lane's Prince Albert. Some years ago Mr. Lane acquired celebrity as a Grape-grower by the marvellous specimens of the Muscat of Alexandria with which he astonished the frequenters of horticultural shows at home and in many parts of the Continent. Mr. Lane was a man of kindly disposition, a fast friend, and generally highly esteemed.

PARIS GREEN FOR INSECTS.

PARIS green is an arseniate of copper, and London purple and Brunswick green as sold by our people, appear to be cheaper forms of the same article. It was first announced in the "American Gardeners' Monthly" as a perfect preservative against the Colorado Potato beetle, and it is now in general use.

The Colorado Potato beetle (*Doryphora decemlineata*) was one of the most terrible pests the vegetable grower ever had to contend with. In a week they would appear in such hordes as to eat every vestige of leaf from a hundred-acre Potato field. Its home is, or rather was, in the Rocky Mountain region, where it fed on *Solanum rostratum*, and other allies of the Potato native there. It could not cross the thousand mile desert between the Rocky Mountains and the Mississippi river. But when the railroad was carried across the desert in 1870 it took a free passage and stormed the Potato fields, and took to Egg Plants and other solanaceous plants. Many schemes have been introduced to apply the poison, but the plan in general use is to mix it with three-fourths, provided it has not already been adulterated, of ashes, dust, powdered lime, or any similar material, and sift it through any old tin vessel with holes, as in a cullender. The vessel is tied to a long pole, and the workman stands to windward, so that the poison will not blow in his eyes. It is sifted while the dew is on the foliage. It has saved many a thousand acres, and is often welcomed rather than feared. There would often be a glut, but the ignorant and careless lose their crops, while the "book-learn't"—as those who read are derisively called by the purely practical man—saves all his crop at little cost, and gets heavy prices for the tubers he saves.

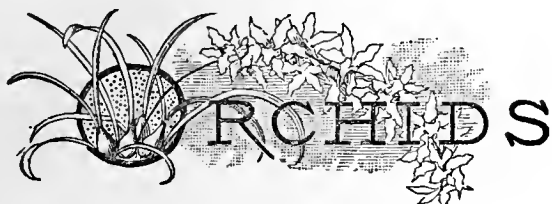
Paris green is now used as a preservative against any insect that eats. Against such as suck, as in the class of aphides, it is useless. In trees out of reach of a man with a sifter, it is used in water, and applied by a pump or syringe. In many regions it is impossible to get an Apple for the codlin moth, or a Plum or Apricot for the curculio. Paris green syringed over the trees at an early stage effectually secures a crop. Sometimes rain falling soon after the application, a second, or even third dose is necessary.

Much opposition was made to its general introduction because of its poisonous character. Strange to say it is extremely rare to hear of any accident through its use. Everybody seems to know how to use it, just as they have learned how to use gunpowder. The Cabbage here suffers fearfully from the caterpillar (larvæ of *Pieris rapæ*), but I never heard of anyone using Paris green for its destruction, because all know that the Cabbage leaves would retain the poison.

London purple, the same I suppose as Brunswick green, is cheaper than Paris green, and is being freely used. It is a great blessing to the American farmer or gardener in any of these forms.—THOMAS MEEHAN, *Germantown Nurseries, Philadelphia, United States.*

[We have pleasure in publishing this article from our esteemed

correspondent, who is one of the world's most diligent workers in horticultural research. The information imparted will answer several inquiries on the subject to which it refers. Paris green, as Mr. Leonard Coates has informed us, is mixed at the rate of 1 lb. to 200 gallons of water in California, and at this strength destroys caterpillars on fruit trees without injuring the blossom.]



ORCHID NOTES. CATTLEYAS.

THIS genus would appear to be the most popular generally, and no wonder, seeing what a number of gorgeous species there are, and how freely they flower. Being imported in large quantities all the commoner forms can be bought at a comparatively cheap rate, and if a judicious collection is made, and the plants fairly well cultivated, the enthusiast with limited means even may have something to gladden his eyes at almost any time of the year. We have had a few flowers of *C. Trianae* at different times from November to May; next came the beautiful *C. Mossiae* and the showy *C. Mendelli*, these being followed by *C. Warneri*, *C. Skinneri*, and *C. intermedia*. Towards the end of July *C. Gaskelliana* is available, and those who require good exhibition Orchids early in August ought to cultivate several plants of this, the best in the labiata section, and also *C. crispa* and *C. Loddigesii*, the last named being the more durable and serviceable. The true *C. labiata* flowers in the autumn, but some of the forms are in bloom much earlier. The fine *C. maxima* is usually in flower during November and December, and *C. dolosa* is also a good late-flowering species. To the foregoing might well be added the beautiful *C. Dowiana*, which is useful for the August shows, and *C. Bowringiana* is of free growth and is a beautiful flower. The foregoing by no means exhausts the list, and there are many very beautiful varieties in each section some of which may well be added when the novice has mastered the few cultural details to be observed in their treatment, and is also sufficiently advanced in Orchid lore to fully appreciate the points of merit in the flowers.

CULTURE.

When a house can be devoted principally to Cattleyas, this being well furnished with high stages and good side benches, then it is advisable to keep the bulk of the plants either in ordinary pots, or, better still, perforated pots and pans. Where, however, they have to be grown in a mixed plant stove, then I prefer them in baskets or pans suspended near the roof. The deep pots especially ought to be half filled with drainage, and in every case the compost should consist of good roughly broken fibrous peat and an equal quantity of charcoal and crocks. Being fixed well on the surface of this, and not mossed over in any way, the roots soon ramble over and through it, and all the time it remains in a sweet state they will, other conditions being favourable, thrive most satisfactorily. Any at the present mere subsisting in a mass of sour compost—and there are many in this bad plight—ought to be taken in hand at once, and partial recovery may take place this summer. If the drainage is choked then must a completely fresh start be made, but if clean and abundant the safest and best procedure is to pick away the sour soil from the roots and renew with perfectly fresh compost. A very high temperature at this time of year, or say such as *Allamandas*, *Ixoras*, and *Crotons* delight in, is simply ruinous to Cattleyas, and this we once found out to our cost. Plants, both suspended in baskets and shelves in pots, all rooting strongly and growing freely, suddenly came to a standstill, and the roots soon decayed badly—they had been cooked in fact. The greater portion of the plants were removed to a cooler house, or what is more properly a fernery, the temperature of which ranges from 65° to 75° by day and fully 10° lower by night, and in about a fortnight root action recommenced, and the old happy state of affairs was soon restored. A moderate amount rather than a dense shade best suits Cattleyas during the hottest part of the year, and the pots should be well watered, and the baskets dipped as often as found dry. In the autumn much more light and less moisture is needed, but, unlike the *Dendrobiums*, Cattleyas, with but few exceptions, one of these being *C. Skinneri*, do not require to be baked—that is to say, severely ripened.

SOFT WATER FOR ORCHIDS.

A good supply of soft water is of inestimable value to the Orchid grower; in fact, it is one of the most important aids to

success. Those, therefore, who are fortunate in having one or more large soft-water tanks in their Orchid houses ought at this time of year especially to carefully husband their supply, as it may be some time before any appreciable quantity of rain water falls. It should be used for watering and syringing Orchids only, and not a drop ought to be wasted either in damping down or washing the floors of the houses. Soft water is, so to speak, both meat and drink to the roots, and when always available no manure of any kind should ever be used. Being stored in the house, if possible above the level, and not covered in closely (stages may be fixed over it with advantage) the water does not become hard, as it is liable to do in covered tanks, and it is also of much the same temperature as the house, therefore fit for use without adding heated water. Nothing can well be worse for choice plants than water drawn from hot-water pipes, and if it is at any time necessary to raise the temperature of water to be used add water heated in a copper in a copper or kettle. There is no injurious vapour arising from open tanks, but, on the contrary, they serve to purify the atmosphere. Small tanks over hot-water pipes are of good service in an Orchid house, and it is over these where the *Phalænopsis* are most at home.—I. M. H.

GARDENERS' ORPHAN FUND.

ELECTION OF CHILDREN AND ANNUAL DINNER.

THE annual general meeting of this Charity was held at the Cannon Street Hotel on Friday last, when the report and recommendations of the Executive Committee were adopted, six children elected to participate in the benefits of the Fund, and the annual dinner subsequently celebrated. This was a greater success than the most sanguine expected, and the only incident that caused a little momentary disappointment was a number of visitors, whose acceptances had not been received at the appointed time, arriving late and finding the tables filled; thus an overflow dinner was a necessity, but subsequently room was found for all, and the proceedings were of the happiest character throughout. The magnificent and unrivalled Kentias of Messrs. Wills & Seager imparted a tropical appearance, and these with the beautiful floral decorations of friends mentioned below, and a bountiful dessert supplied gratuitously by Mr. Munro of Covent Garden, and other willing helpers, furnished the noble room in the most satisfactory manner. The speeches delivered received, as they deserved, the best reception. Miss Marie Belval and her assistant vocalists enlivened the proceedings, and, as a climax to the event, and on the generous initiative of Mr. Harry J. Veitch, the dinner will result in a gain of £200 to the charity, and the possible addition of two more children to participate in its benefits.

REPORT AND FINANCIAL STATEMENT.

The following is the report of the Executive Committee presented to and adopted by the meeting, with the financial statement appended:—

In presenting their second annual report the Executive Committee desire to record their high appreciation of the support that has been accorded to the charity in various ways during the past year.

They would also particularly express thankfulness in having been enabled during the same period to dispense the means of support to a number of children, who, but for the assistance thus granted, would have suffered privations which it is felt that no orphan child of a British gardener should endure. Experience has brought home to the minds of the Committee, more forcibly than ever, the pressing need that exists for a strong fund to meet the urgent claims made upon them.

It is impossible adequately to represent to the subscribers the profound expressions of gratitude received from widows of gardeners, and other relatives of the children who were last year elected to participate in the benefits of the Fund.

It will be remembered that at the first annual meeting six candidates were elected by the votes of the subscribers, and that subsequently, owing to the satisfactory character of the financial statement then presented, the Committee felt justified in placing the four unsuccessful candidates on the Fund also. Shortly afterwards, through the generosity of Mr. N. N. Sherwood, who placed the sum of £100 at the disposal of the Committee, yet another child was placed on the Fund—making eleven in all who now participate in its benefits, as a result of the first year's work.

The Committee desire to express their deep obligations to His Grace the Duke of Bedford for the use of the flower market in Covent Garden for the purpose of holding the second evening fête, which was as beautiful a floral spectacle as it was beneficial to the object it was designed to assist, the amount derived on the occasion being over £200. Grateful thanks are tendered to the Baroness Burdett Coutts who so kindly opened the Exhibition, to the standholders who so freely contributed the plants and flowers, and to all who assisted in rendering the fête such a gratifying success.

To His Grace the Duke of Marlborough the best thanks of the Committee are tendered for opening the famed gardens of Blenheim at an appropriate time on behalf of the Fund, and to His Grace's gardener, Mr. T. Whillans, for his willing and effective co-operation. The amount raised by this means was £73.

The Committee are also greatly indebted to Mr. D. T. Fish, Hardwicke House Gardens, Bury St. Edmunds; Mr. Owen Thomas, Chatsworth; Mr. H. B. May, Edmonton; Mr. W. Wildsmith, Heckfield Place; Mr. A. Dean, Bedford, and others, who, in their respective districts organised entertainments in aid of the Fund, which resulted in sums of substantial value being raised. To the many friends who have undertaken the duties of local Secretaries the Committee desire to express appreciative thanks for the valuable services they have rendered, and among them they would specially mention Mr. J. Hughes of Birmingham, who by means of collecting boxes has obtained a considerable amount in small sums.

To the gardening press the Committee record their great obligations for valued support; also to Mr. John Fraser, Lea Bridge, and Mr. W. Sharp, for auditing the accounts, a statement of which is herewith presented.

Acting on the advice of Mr. A. H. Smee, one of the Trustees, and having regard to the stability of the Fund, the Committee regret being unable to recommend the election on this occasion of more than five children out of fourteen applications; and it is felt that this fact affords the strongest appeal for further aid for the succour of helpless children. Through the munificent gift of £500 by the Duke of Bedford, the Committee have great pleasure in announcing that a sixth child will this day be placed on the Fund.

Mr. George Gordon, of Gunnersbury, has been elected a member of the Committee in the place of the late Mr. Howe (an earnest worker in the interest of the Fund, whose death is much regretted), and Mr. F. Q. Lane, of Great Berkhamstead, in the place of Mr. H. Williams, resigned. The members of the Executive Committee who retire, according to the rules, are Messrs. Cannell, Goldring, Head, Laing, Nicholson, Penny, Poupert, and Roberts, who are recommended for re-election. The retiring Auditor, Mr. W. Sharp; the Treasurer, Mr. T. B. Haywood; and the Hon. Secretary, Mr. A. F. Barron, are also nominated for re-election.

The Committee venture earnestly and respectfully to present the claims of the Gardeners' Orphan Fund to the consideration of all who derive pleasure from or are engaged in horticultural pursuits, and will be thankful for the employment of such means as can be devised for according it the support that is needed for carrying out its beneficent work.

CASH STATEMENT FOR THE YEAR ENDING JUNE 30TH, 1889.

Receipts.

	£	s.	d.	£	s.	d.
To Balance from last account ... ..	...	...	...	608	6	10
„ Subscriptions	323	8	0			
„ Ditto collected by Local Secretaries	102	12	0			
				426	0	0
„ Donations	890	7	2			
„ Ditto collected by Local Secretaries...	183	3	0			
				1073	10	2
„ Receipts from Covent Garden Fête ... ..	...	...	...	314	11	3
„ Proceeds from Annual Dinner ... ..	...	...	...	63	17	0
„ Ditto from Sundry Entertainments ... ..	...	...	...	26	11	6
„ Advertisements in List of Subscribers ... ..	...	...	...	33	11	0
„ Dividends on Stock ... ..	...	...	...	36	12	8
				£2583	0	5

Expenditure.

	£	s.	d.	£	s.	d.
By Allowances to Orphans ... ..	...	...	...	139	15	0
„ Printing and Stationery	75	16	2			
„ Hire of Rooms for Meetings... ..	9	9	0			
„ Postages	30	1	0			
„ Addressing Circulars... ..	5	5	0			
„ Advertising	0	14	0			
„ Collecting Boxes	8	8	0			
„ Expenses of Local Secretaries	1	4	8			
„ Secretary's Clerk	20	0	0			
„ Sundry Expenses (Petty Cash)	5	4	0			
„ Bank Charges	0	9	4			
				156	11	2
„ Expenses of Covent Garden Fête ... ..	...	...	...	114	6	9
„ Ditto Annual Dinner... ..	...	...	...	63	13	9
„ Purchase of £503 2s. 5d. 2½ per cent. Stock	500	0	0			
„ Ditto £500 Canadian 3 per cent. Stock	485	12	6			
„ Ditto £522 17s. 5d. 2½ per cent. Stock	514	7	6			
				1500	0	0
„ Balance at Bank ... ..	...	...	...	605	13	9
				£2583	0	5

Note:—Investments.

	£	s.	d.
2½ per cent. Consols	2025	19	10
Canadian 3 per cent. Stock	500	0	0
	£2525	19	10

Having inspected the Securities, and examined the Books and Vouchers supplied to us, we certify the above account to be correct.

Signed:—JOHN FRASER.

WM. SHARP, Chartered Accountant } Auditors.

Dated 15th July, 1889.

THE ELECTION.

The counting of the votes recorded in favour of the several candidates had the following result:—

	Votes.
Bessie Taylor, aged two years	237
Arthur John Ireland, aged six years	233
Edmund Walker Mosedale, aged three years	151
William Charles Allen, aged five years	133
David George Guthrie, aged two years	108
Harry Robinson Preston, aged one and half year	103.

The next in order who will possibly be placed on the funds were—

Robert James Todd, aged eight years	92
Olive Chapelow, aged four years	87

The votes recorded for the remaining candidates will be placed to their credit for the next election.

THE DINNER.

At this, the second anniversary dinner, Sir Julian Goldsmid, Bart., M.P., the President of the Institution, occupied the chair. A numerous company assembled, including Dr. M. T. Masters, Messrs. Shirley Hibberd, G. Deal (Chairman of the Executive Committee), A. H. Smee (Trustee), H. J. Veitch, and H. M. Pollett (Vice-Presidents), A. F. Barron (Hon. Secretary), D. T. Fish (Hardwicke), J. R. Bourne, A. W. G. Weeks, John Wills, F. Seagar, John Laing, H. Turner, J. Cutbush, J. Smith (Mentmore), A. Dean, R. Dean, Jesse Willard, T. A. Dickson, J. Assbee, H. B. May, J. Hudson, Alderman Hardy (Chiswick), C. H. Sharman, H. Cannell, most of the members of the Committee, a strong contingent of gardeners and growers for market, the total number present being about 170 persons.

After the loyal toasts, which were given from the chair,

The PRESIDENT proposed the toast of the evening "The Gardeners' Orphan Fund." He said that the Gardeners' Orphan Fund was now one of the well-established charitable institutions of England. (Cheers.) In order to test that, it was desirable to call attention to the accounts. He found that last year their total receipts were £1820, and the balance which they brought forward was £600. (Cheers.) As the result of that year they were able to invest £1000 in Government stock. On looking to the balance-sheet now presented he found that they had £2525 invested, an increase on the year of £1500. The first year they were able to invest £1000, the second year £1500, and obviously next year they must invest £2000. (Laughter and cheers.) Well, if they went on at that rate, the time would soon come to which he looked forward with satisfaction, when they would have funds of at least £10,000 invested. He should like that to be the case, for the reason that they were rapidly increasing the number of recipients of their charity, and there could be nothing better than that the income necessary for the orphans should come from the invested funds. Last year they allowed the orphans £139 15s. They must go on and largely increase that amount, for the reason that they had elected six more recipients of the Fund in addition to the eleven elected last year. When he told them that those six were elected from a very much larger number of candidates, by that simple fact he proved the necessity which existed for founding the Fund. The growers and standholders at Covent Garden had this year, for the second time, given a great fête in that magnificent building which belonged to the Duke of Bedford, and the result of that splendid fête was that they drew the attention of the Duke of Bedford more clearly and distinctly to the work which they had undertaken, and he gave to them a sum of £500 to invest in the Fund. (Cheers.) While expressing their thanks to the growers and standholders for work which they did they had the greatest encouragement to go on and do the same thing for the future year, because it produced results of the most satisfactory character to the funds of the institution. Now in another way this was agreeable to the Treasurer, because, for the first time when they charged 5s. for the tickets the sum realised was £314, and the expenses of the fête, owing to the kind assistance of the growers, only amounted to £114. The result was that the Fund benefited to the extent of £200 out of the admissions. That, he thought, must be a great encouragement to the energetic members of the Committee, and if he was to single out any two more than others as having worked hard in this matter, he would mention Mr. Deal and Mr. Barron. (Cheers.) He thought they (the subscribers) had struck a chord which had resounded in the heart of every man interested in the rising generation. Gardeners, like other men, had wives and families, and, like other men, they some time or other met with misfortune, and it must gladden their hearts to know that there was a fund from which their children, if they were unfortunately bereft of the assistance of their parents, might obtain sufficient to enable them to live. (Hear, hear.) They would gladly increase the number of recipients of the Fund, and they trusted that from year to year that would be done by the Committee. Now it was hardly necessary or desirable that he should point out to them, who knew more about it than he did, how much devolved upon the gardeners. His charming neighbour to his left (Mr. Shirley Hibberd) told him that half an hour before he had begun a discussion with someone on beauty. "What is beauty?" was the point which he and his neighbour considered. He agreed that if they were to pursue the discussion, not only would the remainder of the evening not suffice, but the remainder of the week would be inadequate for it. So far as it went he might say that if there was any profession which promoted and increased the love of beauty, the admiration of everything that was beautiful, it was surely the gardeners' profession, because any man who devoted

himself to any particular branch of that profession was quite sure to find out things which in themselves had new beauties which he could appreciate. Mr. Shirley Hibberd, for instance, had worked hard for years at the cultivation of Ivy. When he told them that there were a hundred varieties, and that recently Mr. Shirley Hibberd had discovered a Golden Ivy, he thought they would see that even with that neglected plant there was very much to be done. (Hear, hear.) Why he had mentioned that was this, he thought that every gardener ought more or less to strike out if possible a particular line for himself, because it was evident they had not come to the end of the knowledge which was to be obtained with regard to the many varieties of plants and fruit with which they had to deal. He was quite satisfied that if each one of them would make up his mind to devote himself to one particular point, in the end he might obtain very useful information and most satisfactory results. (Hear, hear.) He could give many examples of this, because they all knew that fresh varieties of fruit, for instance, had been produced by working gardeners, and many other things might be found out if they devoted their attention to a particular branch of industry. No man ought to consider himself too low to improve the profession to which he belonged. (Cheers.) Perhaps they would say that that had very little to do with the Gardeners' Orphan Fund. But it had to do with it in this way. It was obvious that if a man had originality and enterprise, that the possibility was that by finding out something he would improve his own position, and then instead of running the risk when he died of having his children thrown upon the Orphan's Fund he would probably be a large contributor to the Fund himself. That was an important matter, and it was for this reason that he had mentioned it. It was quite certain that they had shown by their attendance there their interest in this Fund. They knew as well as he did the advantages which it offered to those placed upon it, and they ought to do all in their power to encourage the Committee in the useful work which they had undertaken. It was with these views and these sentiments that he proposed to them "Success to the Gardeners' Orphan Fund." (Cheers.)

Mr. G. DEAL, in responding, said that as spokesman of the Committee of the Institution he returned Sir Julian and those present the warmest thanks for the manner in which the toast had been proposed and received. With regard to the Gardeners' Orphan Fund he was delighted to inform them that their success during the past year had exceeded even that of the previous year. It was predicted that the Fund having been established as a Jubilee Fund, they might expect that the first year their contributions would exceed those that would follow. He was delighted to inform them that the very contrary had been the case. They had touched the spring of love in the hearts of gardeners towards the orphan. (Cheers.) It seemed to him that in 1887-8 they had only sown seed that was to bring forth greater, better, and riper fruit in the year 1889. (Cheers.) In the twelve months 1888-9 they had had contributions exceeding those of the fifteen months of 1887-8. He took that as great evidence of the fact that the Gardeners' Orphan Fund was thought to be a desirable institution, and that they were anxious to do their duty to the orphans of the less fortunate members of their fraternity. (Cheers.) On behalf of the Committee he thanked the subscribers for the splendid manner in which they had come forward and contributed. (Cheers.) Although he agreed with the suggestion of their distinguished Chairman that it would be well to establish a Fund of £10,000, he thought there was such a future in store for the Gardeners' Orphan Fund as would justify them in electing a larger number of children annually upon a smaller sum. The case was different to that of an insurance office, where they hardly knew the length of time to which some people might live. In the Gardeners' Orphan Fund there was the limit of age of fourteen years, and therefore the Committee were in hopes that even with the present influx of capital they might at some future time be enabled to elect a greater number of children *pro rata* than they had hitherto done. If similar success awaited them in the future to that which had attended them in the past then they had a splendid future before them. The tree which they had planted in the jubilee year would by-and-by shed forth large branches, and take under its shelter the orphans of gardeners who had borne the heat of the day. (Cheers.) He now had to propose a toast which he was sure would meet with a hearty reception. It was the health of their President, Sir Julian Goldsmid. (Cheers.) To him they were deeply indebted for the success of that movement, and he thought they were particularly fortunate in having so able and so distinguished a President. He wished to embellish the toast with a little feminine adornment. It had been their good fortune by the generosity of the Duke of Bedford, backed up by the Covent Garden growers and standholders, to hold floral fêtes in aid of the institution, and the great magnet of attraction there was Lady Goldsmid. (Cheers.) He hoped they might have her presence on many future occasions, and as they were so much indebted to her for her interest in the fête, he begged to couple her name with the toast. (Cheers.)

The CHAIRMAN briefly returned thanks, and said that Lady Goldsmid was very glad indeed to attend the Floral Fête. He had great pleasure in attending that dinner, and he was most grateful for the kindly way in which they had received the toast. (Cheers.)

Mr. VEITCH proposed "Gardeners and Gardening." He said he was pleased to see such a numerous company, and he thought it augured well for the future of the Gardeners' Orphan Fund. In asking them to drink this toast he had the pleasure of coupling with it the name of Mr. D. T. Fish, than whom no one was better known, and no one could be selected more representative of the gardening fraternity of Great

Britain. (Cheers.) The only point that he would speak about was the liberality with which gardeners had come forward in support of the Fund. They saw by the list of children elected last year that no fewer than ten candidates were placed on the list, in addition to one who was put on in connection with the Sherwood trust. That spoke volumes for the success of the institution. To-day they had the satisfaction of putting on five more in the regular way, and another in consequence of the munificent donation of the Duke of Bedford. With the additional candidate elected that made only six as against eleven of last year. He did not like to see the number less than last year. He thought that Mr. Sherwood had given them a lead which should be followed. He was anxious to follow his friend Mr. Sherwood on certain conditions. He found from the Chairman of the Committee, Mr. Deal, that £100 would put a child on the list and keep him until fourteen years of age, and if those present would find £100 to put on a candidate, he would find £100 to put on another candidate. (Cheers.) They could not afford to let too many orphans be waiting for their generosity. They had elected six that day, and they had eight who were not elected. When would their next election be? They could not tell at present, therefore he asked them earnestly to provide the £100, on condition of which he would provide £100 himself within three months from that time. He knew that there were gardeners to whom every shilling was of consequence; at the same time he urged them to make a special effort in this matter. He thought they might congratulate themselves that, considering their position in the world, there was no more liberal body of men in existence than gardeners were, and what they had done in the past justified the statement. (Cheers.)

The PRESIDENT said he trusted they would support Mr. Veitch. It would be well for them to get another £100, and towards that he proposed himself to send to Mr. Deal the sum of £25. (Cheers.) He apologised for having to leave to fulfil another engagement, and asked Mr. Shirley Hibberd to take his place.

Sir Julian Goldsmid then left the hall amidst cheers, and the chair for the remainder of the evening was occupied by Mr. Shirley Hibberd, who on taking this position said they had lost a good shilling and had got a bad sixpence. (Laughter.) He should get out of the difficulty by asking Mr. Fish to illuminate them—to bring some phosphorescence from the sea. (Laughter and cheers.)

Mr. FISH then rose to respond to the toast. He said the report which they had heard of their progress had been a most cheering report. He thanked Mr. Veitch for associating his name with the toast, which he considered almost the toast of the evening. They knew how humble the gardeners of England were. It could not be otherwise. No man could have sat at the feet of Nature for the number of years that he had and not have learnt the first lesson which it taught—that of humility. (Cheers.) He was reminded before he came to London that it was a curious place, and they would be able to tell him whether it was true or not; but it was said that one of the first effects of London was to melt down all individual cleverness into one great lump of cleverness. He believed there was a good deal of cleverness there that night, but he did not think that London had had the effect which was attributed to it in their case. They certainly had had one distinguished lump of cleverness, and something better—of goodness—in their Chairman who had just left. (Cheers.) There was a good deal of originality about gardeners, who were never content with their present attainments. They were always reaching forth to something better. He was much pleased with the suggestion of Sir Julian that each one should strike out some new path as the way to pleasure and wealth. Now he (the speaker) had been trying to strike out new paths all his life. They had led to a great deal of pleasure, interest, enjoyment and happiness, but the one thing they had not led to yet was wealth. (Laughter.) The fact was, gardeners had to take their wages in beauty. (Laughter and cheers.) That was one of the chief reasons why they wanted this Orphan Fund. It was because, work as they would, do what they might, improve their business and themselves as they would, the one thing, wealth, was not attained. One thing, however, they had accomplished. In starting their Orphan Fund they had succeeded in linking beauty with beneficence. (Cheers.) It used to be said that time and tide wait for no man, but in Covent Garden Market the power of their little orphans had been such that they had succeeded in arresting the progress of beauty from the producers to the consumers just long enough to allow them to get £200 out of it. (Cheers.) Beauty, like mercy, was twice—aye, many times—blessed. The plants were more beautiful and the flowers more beautiful and fragrant after they had exacted contributions for their helpless orphans. (Cheers.) Up and down the country their example with reference to the Floral Fête was being followed. If there were any who were hesitating as to whether they should follow the example of the President he begged of them not to hesitate any longer, but to make a strong effort on behalf of the orphans, and in due time they would be sure to meet with their reward. He could not sit down without saying a word or two about gardeners and gardening. Gardeners found the earth a wilderness, and they were fast making it a garden of Eden. With reference to the future of gardening he contended that it had no limits and no bounds. Talk about finality, they knew nothing of it in horticulture. Gardeners who had done most were the readiest to tell them that they seemed like little children picking up pebbles on the sand while the great ocean of truth lay all unexplored. With the knowledge which their horticultural press was spreading broadcast around them they could not now have any stupid gardeners. He feared that their brothers of the knife and spade would be entirely driven off the course by their brothers of the pen; they were

so wise and far-seeing, they could do the work so easily on paper. (Laughter and cheers.) He himself found it much easier to garden on paper than at his own home. (Laughter.) He believed there was a great future before gardeners, and they were only just beginning the great art of horticulture.

Mr. A. DEAN proposed "The Vice-Presidents, Trustees, and Auditors." He said that one of the speakers had referred to the six children who had been elected to the benefits of the Orphan Fund, and he (Mr. Dean) had thought of the feeling of disappointment that would be experienced by unsuccessful candidates. Mr. Veitch had made a magnificent lead, and could not the other sixteen gentlemen who were associated with him, and included in the toast, make up the other £100? The President had also made a generous offer, and he trusted that others would follow his example. (Cheers.)

Dr. MASTERS, who acknowledged the toast, said that from a list placed in his hands there had already been a liberal response made to the appeal that had been addressed to them, and amongst those down in the list were Messrs. Wills, Pollett, Gaymer, Shirley Hibberd, Dr. Masters, and Alderman Hardy. (Cheers.)

The CHAIRMAN then proposed "The Committee and Officers of the Board." He said that Mr. Veitch's proposal would come before them as a matter of business. It had been suggested that each of the Vice-Presidents should subscribe £10 each, but they could not measure another man's corn by their own bushel. (Hear, hear, and laughter.) He should be glad to contribute £5 to the Fund. (Cheers.) The officers had had a tremendous task set before them, and it was not yet accomplished; but what they had done was a matter of surprise no less than of delight. (Cheers.) He had not in his time seen any movement pushed along with such steadiness and energy as this had been. It was a significant fact that when a proposal had been made to gardeners for their own benefit they had been indifferent; but when something was proposed in which they had no personal interest, from which the element of selfishness was entirely eliminated, then they found them putting their shoulders to the wheel and accomplishing most wonderful things. No man there would derive the slightest advantage from the Fund; they were moved by the demand made upon their sympathies by the young and tender who could not help themselves. (Cheers.) He had not seen in his time so magnificent an example of unselfishness in a great public movement as in the Orphan Fund. He knew that there were many such institutions, but the point that seemed particularly interesting was that the gardeners who had not been particularly careful about themselves were careful, thoughtful, and energetic in the interest of these orphans. (Hear, hear.) They hoped that the orphans in need of assistance would decrease rather than increase, that horticulture would have such a position that every man who practised it would be able to provide for his children so that they would not come upon any fund whatever beyond his own fund. (Hear, hear.) That was their hope, and it was not a vain hope, for this country was rich, and was growing richer. The gardener was in a peculiar position. He did not earn much, he had no chance of becoming rich except by some accident; but between him and his work there was a beautiful sympathy which rendered his industry a most solid, substantial, and promising thing. He could understand an engineer loving his engine, he could not understand an undertaker loving his work. (Laughter.) They might pass through various occupations of men and see how much many of them must be tried in connection with their daily duties. Some of them had painful and horrible tasks, and in some cases tasks which were detrimental to health and morals. In the gardeners' case it was different. In 999 cases out of 1000 he loved his work, and was in sympathy with it. He loved it more than his wages. (Laughter.) Mr. Fish had said it was very pretty to do gardening on paper; but they had to do it on paper, and Mr. Fish forgot for a moment that he had spoiled more paper than any man who had ever lived. (Laughter.) Another feature that was noteworthy was the wonderful sympathy that was cultivated between the gardener and his employer. He did not mean to say that gardeners were angels—(laughter)—but he was astonished to find that amongst criminals gardeners had no place. (Hear, hear.) They did not come out with distinguished honours in the Newgate Calendar. (Laughter and cheers.) The management of the Fund derived considerable advantage from that circumstance. All the Committee and officers had been trained in the practical school of business. From the first they had had the assistance of Mr. Deal. They wanted in the first instance a man of business. They found Mr. Deal, and they were wise enough to make use of him. (Hear, hear.) Step by step the Fund had grown to its present proportions, and certainly the management must have very much of the credit. Some things succeeded by a fluke—he did not know exactly what that was—but this institution had not succeeded by a fluke. This success was brought about by systematic, honest, steady work. He should ask Mr. Deal and Mr. Barron to respond. They were two gentlemen who had brought the Fund to its present proportions. (Cheers.)

Mr. G. DEAL, who first responded, referred to the careful manner in which the Committee had worked in the interests of the Fund. A great deal of the success of the Fund was due to the indefatigable energy of the local Secretaries throughout the country in obtaining supporters. Amongst those who had rendered special assistance was the gardener to the Duke of Marlborough, Messrs. Hughes of Birmingham, D. T. Fish, Cummins, Wordsworth, Scott, Thomas, Greenfield, Head, Wood, Ward, Wilkins, and others. He only trusted that the zeal which had been shown on the part of those gentlemen would not flag. (Cheers.)

Mr. BARRON, in responding, said he was not a little proud of his position as Secretary to the Gardeners' Orphan Fund. So long as they continued to repose confidence in him, so long would he continue to work in promoting the interests of the Fund. He had received from all parts of the country expressions of gratitude from those who were participants in the benefits of the Fund, and great encouragement from others who interested themselves in its welfare. (Cheers.)

Mr. A. SMEE next gave "The Local Secretaries." In the course of his remarks he said that in the Jubilee year they planted a Vine. It was a gardening axiom that they should not overcrop a young Vine, but a Vine required nutriment, and in answer to the appeal which Mr. Veitch had made he should be happy to subscribe £5 towards growing one bunch of Grapes. (Cheers.)

Mr. SHARMAN replied, and testified, as one of the Executive Committee, to the excellent work which local secretaries were doing generally throughout the country. (Cheers.) They were most disinterested and unselfish in their operations. The Chairman would excuse him if he mentioned that the Institution originated to a great extent from the suggestion of Mr. Penny. (Cheers.)

The CHAIRMAN stated that Messrs. Lane & Sons had promised £5. He then proposed "The Visitors."

Alderman HARDY, who first responded, referred to annual subscriptions as being more acceptable than donations. He announced his willingness to give a donation of five guineas, and an annual subscription of a guinea. (Cheers.)

Mr. BOURNE, who also replied, said it was gratifying to find that the Fund was making such progress—(hear, hear). Many of such movements often bubbled up and ended in bubble, but that Fund was certainly taking good hold in the gardening profession. He felt a great desire to see the Fund placed on a permanent basis. He thought they should endeavour to get a capital fund. They should endeavour to get such a fund, that if at any time there was a falling off in the subscriptions the pressure would not be felt by the Committee, and they should continue to meet any demands that were made upon them. For that reason he felt anxious that there should be an effort made to get a permanent fund. It was with that view that the nobleman whom he represented had given a large donation. His was to encourage others to do likewise, in order to establish a permanent fund for the gardeners' orphans. (Cheers.)

Mr. R. DEAN proposed the health of those who had generously furnished the plants, fruit, and flowers with which the room was beautifully decorated. (Cheers.)

Mr. JOHN WILLS acknowledged the toast, and in the course of his remarks said it was surprising to him to see what marvellous strides the Fund had made in the two years. He did not think they would find in the records of any other society such an instance of success. (Cheers.)

The CHAIRMAN said they were indebted to Messrs. Wills and Segar, Laing, Cutbush, B. S. Williams, Sander (of St. Alban's), and others for the plants, fruit, and flowers. (Cheers.)

Mr. ASSBEE proposed "The Horticultural Press," to the representatives of which he said a large share of the success attained was due.

Mr. J. WRIGHT replied. He said that the proprietors of the Horticultural Press took a warm interest in the welfare of the Fund, and hoped the conductors had not neglected any opportunity afforded them of advancing its interests. (Cheers.)

It was announced by Mr. DEAL that £66 had been subscribed towards the second £100 in respect of which Mr. Veitch had made an appeal.

The proceedings terminated with a vote of thanks to the Chairman.



CHRYSANTHEMUMS IN LEICESTER AND NEIGHBOURHOOD.

VERY keen is the interest, rivalry, and enthusiasm felt and being shown in the culture of the plants during the present season by the more active members of the Leicester and Midland Counties Chrysanthemum Society. This is mainly due to the spirited action of the Committee at the commencement of the present season in firstly framing and adopting a most liberal and attractive schedule of prizes for the coming November show (far ahead of anything the Society has previously done in the same way). Secondly, in securing the Temperance Hall, the best public building in the town for such a purpose; and, thirdly, in engaging as judges two of our best known and most esteemed of "Mum" experts, Messrs. Wright and Holmes. Having during the past week had an opportunity of visiting a few of the principal growers and inspecting their plants it has occurred to me that a few notes would be of interest to growers and exhibitors in other districts who are readers of the Journal, and some of whom it is hoped will be competitors at the Leicester Exhibition.

MESSRS. LOFLEY AND ANTHONY'S PLANTS.

These gentlemen (uncle and nephew) are amateur growers, residing and working together at South Knighton, Leicester. Their collection

of plants consists of about 300, and is exclusively confined to the best known exhibition varieties. The incurved section is that which receives most favour at the hands of the elder Mr. Lofley, whilst the Japanese varieties are the especial favourites of the younger, Mr. Anthony. A pleasant mutual agreement, therefore, between them is, that whilst both work together to one end, each takes charge of his own favourite section.

As a proof that they are no tyros in Chrysanthemum culture I may state that Mr. Anthony was successful in carrying off the Veitch Memorial medal for twenty-four blooms, Japanese, at the last show of the Hull and East Riding Society in a very strong competition against well known first class growers, and hopes again to enter the lists as a competitor at the next show of the same society. The whole of his and Mr. Lofley's plants are in the best possible condition, strong, without being gross, the wood apparently ripening well, the foliage large and stout and of a most healthy dark green colour, reaching down to the pot, even Mrs. H. Cannell, which with most growers quickly loses its lower leaves, as represented here by several very strong plants is as vigorous as the others and shows none of that, its usual propensity. The Japanese varieties are mostly tall, many being already 6 to 7 feet in height, grown on the natural system, unstopped in any way. They are arranged in rows, given plenty of space for the admission of sun and air both in and between the rows, the growths all trained separately to upright builders' laths, which are again fastened to strong slaters' laths to stout sawn stakes driven into the ground.

An excellent arrangement here adopted for providing free drainage and preventing the plants rooting through into the ground below is the affixing of long boards about 2½ inches wide and half an inch thick on edge at about 3 inches apart, and standing the pots thereon, thus keeping them clear of earth and ensuring free ventilation all around and underneath.

A common difficulty with this, as with all collections I have this season visited, is the showing of premature buds, and from present appearances it would seem likely that the best crown buds of many varieties will be produced too early for the principal shows. Especially is this the case with such varieties as Mrs. J. Wright, Edwin Molyneux, Mdlle. Lacroix, Mdlle. Louise Leroy, Comte de Germiny, and others. The first named variety is here, as in most of the collections I have this season seen, unusually strong and fine-looking. Last season the opposite was the case, and at few shows was it well staged. This year it promises to come out in fine character generally.

BARKBY HALL.

At this fine old place, which is deserving of a more extended notice (the proprietor, T. W. Brooks, Esq., being an ardent lover and supporter of horticulture and of floriculture, and being most ably seconded in this by his skilful gardener, Mr. Landsell), Roses and Chrysanthemums are grown as specialties. Of the latter about 200 are grown in the most approved exhibition form, and are very strong, many of them also being remarkably short-jointed and dwarf with large strong foliage covering the pot surface. No topping or cutting back is practised, nor apparently, owing to the generally short-jointed growth made, is it here needful or advisable. The pots are plunged to about one-third of their depth, mainly with the object of preventing them being blown over and broken during high winds. Mr. Landsell has been for some years past an exhibitor and prizewinner at past Leicester shows. That he may long continue to be such is the wish of myself and most of those with me share his acquaintance.

STONELEIGH, BARKBY.

Mr. W. Billson, the proprietor, has for some years been a very successful grower and exhibitor at home and abroad. His collection comprises about 700 plants, most of which are very strong and in promising condition, providing the plants can be sufficiently ripened. They are somewhat too crowded owing to the large number grown, and the space available for standing them upon being limited. Mr. Billson's name will figure prominently at more than one leading show in November next. The greenhouses at his disposal for flowering the plants, being light, airy, and commodious, are simply perfection for the purpose.

MR. H. JORDAN'S COLLECTION.

Lansdowne Road, Aylstone Park, is the address of this grower, who is a prominent supporter of the Leicester Society and a member of its Committee. He is an earnest and successful amateur cultivator, growing about 200 plants of the best and most recent varieties. The plants in this collection are almost throughout remarkable for their dwarf and sturdy growth, stout hardy stems and large healthy foliage reaching in most cases down to the pot. Sunflower (new yellow Japanese) is here remarkably strong with large leaves, each nearly a foot in length; Etoile de Lyon and Mdle. Louise Leroy are also very robust and strong. A notable feature in Mr. Jordan's practice is the mixture of a considerable proportion of common salt in all the potting compost he uses, sufficient to destroy all earthworms therein contained, and to this he mainly attributes the unusual dwarf, sturdy character of his plants. He is of opinion, formed from several years of experiments amongst various kinds of plants, that salt has a direct tendency to produce short jointed growth.

Another novel and commendable feature in Mr. Jordan's practice is his system of summer training, which differs from what I have at any time seen elsewhere. Three stakes are thrust into the pot around the sides, forming a triangle, and of a height to which it is believed the growths will attain. The plants are then arranged in lines as usual.

Along the back side of the line of pots stout pointed stakes are driven into the ground, and a strong longitudinal lath fastened to these at about 3 feet 6 inches high. Also on a level with these are iron brackets screwed to the upright stakes and projecting horizontally sufficiently far to carry another longitudinal lath parallel with the first, and about 9 inches therefrom. To these two laths then are all the stakes tied. The advantages claimed for the system are—firstly, the more equable diffusion of air and light around each branch; and, secondly, that much time and trouble are saved at the time of housing the plants, nothing farther being then required besides cutting the ties attaching the stakes to the laths and carrying the plants indoors.

Mr. Reed, the energetic and respected Secretary of the L. and M.C.C. Society, lives next door to Mr. Jordan, and also grows about 200 plants, using the same compost, salt, &c., as does that gentleman. He, too, is equally a strong believer in the value of salt for the purposes named above. His plants, partly grown as cut-backs and part natural grown, are promising to produce some good flowers. They are not, however, yet so strong as are Mr. Jordan's.—W. K. W., *Syston*.

LILIUM PARVUM.

ONE of the most attractive of the small-flowered Lilies is the Californian *Lilium parvum*, regarded by Mr. Baker in his synopsis of



FIG. 8.—LILIUM PARVUM.

the genus as a variety of *L. canadense*, under which also are grouped *L. Walkeri* and *L. parviflorum*. It has stems usually 2 feet high, but when very strong it sometimes greatly exceeds that height, though in its native state it is frequently not more than 1 foot high, so that it must be considered as one of the dwarfiest Lilies grown. The flowers are small, open, and nodding; yellow or orange, varying somewhat in tint, and with numerous small dots on the perianth divisions. Like

other Lilies it requires to become well established before it develops its best characters, and for a time after planting the bulbs only weakly growth need be expected. When, however, it has taken to the soil, and the situation is favourable—moist without being wet, and moderately sheltered—it will grow rapidly. In contrast with *L. auratum* or *L. lancifolium*, such small-flowered species as *L. parvum* cannot claim a great amount of attention, but the graceful habit and bright flowers render it a favourite in gardens whenever it is well known. The wood-cut (fig. 8), was prepared from a sketch of some flowers shown by Mr. T. S. Ware in a group of Liliiums at one of the recent meetings of the Royal Horticultural Society.

ROYAL HORTICULTURAL SOCIETY.

JULY 23RD.

MAINLY no doubt in consequence of the National Carnation and Picotee Society's Show being held in the Drill Hall the building had quite an animated appearance, but as the day advanced rain fell and the light was far from being favourable for the inspection of the several exhibits. A report of the Florist's Exhibition appears below.

FRUIT COMMITTEE.—Present: Sir C. W. Strickland, Bart., in the chair, and Messrs. R. D. Blackmore, G. Bunyard, A. Pearson, J. T. Saltmarsh, W. Warren, G. Wythes, H. Balderson, W. Bates, J. Cheal, Harrison Weir, and J. Wright.

Mr. H. Marriott, Prospect House, Skirbeck, Boston, sent a dish of very fine Peas named the Pride of Lincolnshire. No particulars accompanying the exhibit, it was passed by the Committee. Mr. N. Fuller sent a fruit of Idsworth Park Melon, rather thin in the flesh, and though good was not considered equal in merit to other varieties in cultivation. Mr. W. Allan, Gunton Park, sent fruits of Gunton Park scarlet-flesh Melon, handsome in appearance, but not of sufficiently high quality to merit an award. Mr. Allan also sent handsome fruits of Allan's Favourite Cucumber, the result of a cross between Blue Gown and Telegraph: an award of merit was recommended. Mr. A. Dean sent examples of Early Snowball Cauliflower, very dwarf, and a vote of thanks was accorded. Dicksons, Limited, Chester, sent examples of wood wool, the softest not sweet and the sweetest a little harsh. The best kind the Committee have had before them was made from Poplar wood. Messrs. Paul & Sons, Cheshunt, sent a dish of White Versailles Currant, and the variety was advised to be grown at Chiswick. Mr. Bunyard sent dishes of red and white Joaneating Apple; also fruit of Red Astrachan, grown under glass, beautiful in appearance (vote of thanks).

Messrs. J. Veitch & Sons sent a remarkable collection of Goosberries, 112 varieties being arranged in dishes, and a number on stems as cut from the bushes, also several Currants and a few dishes of early Apples, the best of these being Irish Peach; a silver medal was recommended. Messrs. Paul & Son, Cheshunt, sent about fifty dishes of very fine Goosberries, also a dish of The Hornet Raspberry, several of the fruits quite ripe others quite green. They were grown by Mr. Balderson, who stated his plantation gave a succession of fruit sometimes till October. A bronze medal was recommended to Messrs. Paul for their excellent contribution. Messrs. Sutton & Sons, Reading, sent fruiting plants of fifteen varieties of Capsicums, the Bell or Bull-nose being the largest, and the Coral Red Chili previously certificated the smallest. The richly coloured and variedly-shaped fruits had quite an attractive appearance. A bronze medal was recommended for the interesting collection.

FLORAL COMMITTEE.—Present: John Fraser, Esq., in the chair, and Messrs. W. Holmes, G. Nicholson, H. Herbst, G. Paul, R. B. Lowe, B. Wynne, W. Goldring, and F. Ross. Among the plants examined first-class certificates were recommended for the following:—

Cornus siberica Spathi (Veitch).—A dwarf shrub, with leaves 3 inches long and 1½ wide, the prevailing colour orange yellow with green centre; highly effective.

Retinospora pisifera aurea (Veitch).—A graceful golden pyramid, well adapted for hall and balcony decoration, also for lawns and front positions in shrubbery borders.

Spiraea gigantea (G. Paul & Son).—A stately plant, 8 to 9 feet high, with large Vine-like leaves, and a branching head of white inflorescence; very distinct.

Pteris serrulata formosa (Coleman).—A remarkable drooping form, the crested fronds hanging down for a foot in length, like a wig, and as exhibited decidedly ornamental.

Bignonia chirei (Ross).—An old and highly effective conservatory climber, with deep crimson trumpet-shaped flowers.

Bouvardia Mrs. Robert Green (H. B. May).—A dwarf, very floriferous variety, with dense trusses of rosy salmon flowers.

Cyrtomium falcatum Fensomii (Fensom).—A sturdy growing, very deep green form of the well-known species, of considerable decorative value.

Messrs. J. Veitch & Sons had an attractive group of hardy trees, shrubs, and flowers, amongst which the *Cornus* above mentioned; *Ulmus Dampieri aurea*, with its golden foliage; *Spiraea callosa atrosanguinea*, with its deep flowers; *Astilbe Thunbergii*, with white feathery inflorescence, arrested attention; also a box of beautiful varieties of greenhouse Rhododendrons. Messrs. H. Cannell & Sons sent plants remarkable by their sturdiness, and large double flowers of double Begonias. They were raised from seed in January, the stems not more than 5 to 6 inches from the pot, and upright Hollyhock-like flowers, on such

stout stalks that stakes would have been superfluous. Adjoining them was a stand of beautiful Verbenas from Swanley, and vases of the fine yellow Carnation Germania. Messrs. J. Cheal & Sons sent a collection of single and double Dahlias, several of the former being attractive by their Carnation-like markings, and the whole meritorious. Messrs. G. Paul & Son arranged a highly attractive group of hardy herbaceous flowers. Mr. A. Waterer exhibited several very handsome varieties of *Lilium auratum* raised from seed. Mr. G. Wythes sent from Syon House trusses of *Clethra arborea* and a very large flower of *Cereus hexagonus*. Mr. W. Roupell sent very handsome and admirably grown plants of *Polystichum proliferum*, with fronds 2 to 3 feet long, covered with pale green plantlets. Both the plants and fronds individually as thus grown possess high decorative value for appropriate positions.

An award of merit was granted for a collection of Sweet Peas in clear and beautiful colours sent by Mr. H. Eckford. Mr. Laxton also exhibited Sweet Peas in excellent variety and diversified colours. A bronze Banksian medal was recommended to Mr. W. Rumsey for a large collection of cut Roses. We do not know whether other awards were made, though there appeared signs of a return to the time-honoured custom of placing cards on the exhibits before late in the day.

[A meeting of the Floral Committee was held at the Society's Gardens, Chiswick, on July 18th. Present: Mr. W. Marshall in the chair, Messrs. Pilcher, Dean, Herbst, Leach, Hobb, Hibberd, Pollett, Wynne, Nicholson, Cannell, and Goldring. The Committee inspected the collections of Ivies, Stocks, and hardy flowering annuals growing in the Gardens, giving marks of merit to the most approved varieties. A full report of these trials will be published in the Society's Journal.]

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair, with Messrs. James O'Brien, F. Moore, E. Hill, C. Pilcher, H. M. Pollett, J. Douglas, H. Ballantyne, and H. J. Veitch.

A first class certificate was recommended for *Sobralia xantoleuca alba* (Veitch), a charming white wax-like flower, with a primrose throat. Botanical certificates were recommended for *Maxillaria fuscata* and *Dendrobium revolutum* from the collection of Sir Trevor Lawrence, Bart., M.P., who also exhibited well flowered plants of *Cattleyas* Eldorado, Painted Lady, and Wallisi, both very chaste. Mr. H. M. Pollett exhibited *Cattleya Eldorado alba splendens*, the deep colour extending quite round the lip, sepals and petals white, having a bold contrasting effect.

NATIONAL CARNATION AND PICOTEE SOCIETY'S SHOW (SOUTHERN SECTION).

THE expectations of a good Show this year at the southern reunion of the National Carnation Society have been, it is gratifying to say, more than realised, and it is our pleasant duty to record an unqualified success. It is doubtful if a show so good has ever been held by the Society; at all events, the florists present, and they were many, coming from nearly all parts of the country, were unanimous in their opinion that the Show was an admirable one in every respect. The flowers were excellent in quality, and what is not less noteworthy, there was abundance of competition, so that visitors were not, as in some former years, treated to the spectacle of two or three exhibitors competing for four or perhaps six prizes. Besides such well-known growers as Messrs. Douglas, Turner, Henwood, and Phillips, there were others represented by good stands whose names are not so familiar, and from whom still better things may be expected in the future.

CARNATIONS.

To these were devoted classes for twenty-four, twelve, and six blooms, with special prizes for individual specimens, and one for the best Carnation in the whole Exhibition. There were six stands in competition in the principal class, a vast improvement on some former years, and more particularly on last season, when Messrs. Turner and Douglas had the field to themselves. Allowing much for the more favourable season this still remains a very gratifying sign, indicating not only increased interest in these beautiful and valuable flowers, but also a determination on the part of growers to give better support to the shows, even if their chance of success is not particularly bright. It has become quite a matter of course to find the two growers named fighting out the battle for first place in the chief class, and on this occasion history repeated itself. Mr. Turner was victorious with the following varieties. Back row:—Thalia, Mrs. Daniells (very large, full, and fine), Prince George of Wales, Mars, Jas. Taylor, Jas. Douglas, Chas. Turner, and Mrs. Barlow. Middle row: John Ball, Robert Lord (2), Rifleman, Unexpected, Jessica, Sporting Lass, and Jas. McIntosh. Front row: Robert Houlgrave (2), Prince George of Wales, Chas. Turner, George, Beauty of Chelmsford, Samuel Newman, and Rifleman. These were large, smooth, well finished flowers, fresh and in good colour, a great improvement on last year's exhibits. Mr. Douglas also had a wonderfully fresh and neat stand, somewhat smaller than the first prize lot, and with one or two rather coarse flowers, but well up to the average if not above it. The best were Thalia, Tim Bobbin (Gorton), Rob Roy, and Mrs. Whitbourn, though the latter might have been a little cleaner. Mr. M. Rowan, 36, Manor Street, Clapham, London, S.W., had a delightfully fresh and bright stand, but too small to cope successfully with Messrs. Douglas and Turner. He had charming flowers of Rob Roy, Master Fred, Sarah Payne, and Jessica, and was placed third, Mr. R. Sydenham, Roseleigh, Bristol Road, Birmingham, taking the remaining prize.

Of twelve there were eight stands in competition for six prizes, and they formed a large and excellent class. Mr. Rowan won with a capital stand, composed of a seedling (rose flake), Master Fred, George Melville,

Wm. Skirving, Jas. Douglas, Jessica, Fred, Rob Roy, Robt. Houlgrave, Sportsman, Edw. Rowan, and John Whitham, all smooth, fresh flowers. Mr. Douglas followed very closely with Jas. Douglas, Tim Bobbin, Thalia, and John Harland as his best blooms. Mr. J. Lakin, Temple Cowley, Oxford, was third with a good stand, containing a very fine example of *Lovely Mary*, and a beautiful bloom of *Alisemond*. Mr. W. L. Walker, Earley, Reading, was fourth; Mr. H. W. Headland, High Road, Leyton, fifth; and Mr. W. J. Nicholls, 274, Kingsland Road, London, N.E., sixth. These were all admirable stands, and formed a very interesting class.

Mr. C. Phillips, Reading, won with six blooms, the varieties being Robert Houlgrave (rather weak), Jas. Douglas (a large, well-filled, and beautiful bloom), Rob Roy, John Harland, *Alisemond* (finely coloured), and Rifleman. Mr. T. E. Henwood, Auricula Villa, Reading, followed with a capital *Thalia* among his flowers. Mr. Startup, Bromley, Kent, was third; Mr. T. Anstiss, Brill, Bucks, fourth; Mr. J. Nutt, Ross Road, Southampton, fifth; and Mr. J. J. Keen, 15, Castle Street, Southampton, sixth. There were three other stands, so this class was exceptionally strong.

Single specimens were numerous. In the rose flakes Mr. Douglas was first and third with *Thalia*; Mr. F. Hooper, Widcombe Hill, Bath, second and fifth with Mrs. George Cooling; and Mr. Henwood fourth with *Thalia*. In the purple flakes Mr. C. Turner was first and second with Prince George of Wales, the former a magnificent bloom; Mr. Hooper third and fourth with Mayor of Bath, Mr. Nicholls fifth with Squire Whitbourn. In the scarlet flakes Mr. Douglas was first and third with *Alisemond*, Mr. Sydenham second with Sportsman, Mr. Phillips fourth with Sportsman and fifth with Matador. In scarlet bizzars Mr. Henwood was first with Robt. Houlgrave, Mr. Douglas second with the same variety, Mr. Phillips third with Robt. Houlgrave and fourth with Robt. Lord, and Mr. Turner fifth with Jas. McIntosh. In pinks and purple bizzars Mr. Lakin was first with a seedling, Mr. Turner second with Jas. Taylor, Mr. Rowan third with W. Skirving, Mr. Phillips fourth with the same variety, and Mr. Headland fifth with Miss Gorton. In crimson bizzars Mr. Rowan was first with Master Fred and fifth with J. T. Hextall, Mr. Douglas second with John Harland, Mr. Turner third with Rifleman, and Mr. Phillips fourth with John Harland.

The premier Carnation was a beautiful bloom of the scarlet bizarre Robert Houlgrave in Mr. Turner's first-prize stand of twenty-four, which was well shown throughout the Exhibition.

PICOTEES.

The classes in this section corresponded with the Carnations, and as there was plenty of competition a beautiful display was provided. Mr. Douglas, always very strong with Picotees, scored a meritorious victory from five opponents in the chief class. His flowers were in beautiful condition, being remarkably smooth, clean, and well finished. The varieties were as follows:—Back row: *Jessie* (2), *Princess of Wales*, *Her Majesty* (very fine), *Calypso* (first class certificate recommended), Mrs. Sharp, Clara Penson, and Brunette. Middle row: Mrs. Sharp, Mrs. Bower (2), Mrs. Payne, Liddington's Favourite (2), Brunette, and *Pride of Leyton*. Front row: *Nymph* (2), Mrs. Chancellor, Mrs. Gorton (2), Muriel, *Calypso*, and John Smith. Mr. Turner had larger flowers than his rival, but they were less smooth, clean, and finished. Nevertheless they formed a beautiful stand, and easily secured second position. They comprised a superb bloom of *Favourite*, large, well furnished, and bright, also good examples of *Duchess*, Mrs. Nicholay, John Archer, and Exhibition. Mr. Rowan was third with small but clean and fresh flowers, and Mr. Hooper fourth.

There were nine stands of twelve, the best coming from Mr. Rowan. It was composed of Brunette, Mrs. Payne, Mrs. Sharp (a charming bloom), *Favourite*, Edith D'Ombain, Nellie, Amy Robsart, J. B. Bryant, Muriel, Clara Penson (very good), Morna, and Mrs. Gorton. Mr. Henwood was a capital second with large but not perfectly filled flowers; Mr. Douglas third with a well-finished stand; Mr. Lakin fourth; Mr. Headland fifth; and Mr. H. Morris, Hayes, Kent, sixth. There were eight sixes, Mr. Phillips winning with *Favourite* (very good), Mrs. Ricards, Mrs. Payne, John Smith, Zerlina, and Ann Lord. Mr. W. L. Walker was a close second, with a stand of beautifully fresh and well-finished flowers, Mrs. Sharp and Emily both being charming blooms. Mr. J. Rebbeck, 5, Bevois Terrace, Southampton, was third, Mr. Keen fourth, Mr. Anstiss fifth, and Mr. Nutt sixth.

There was a great array of single specimens, with some beautiful examples amongst them. Rose, light edge.—Mr. T. E. Henwood first (variety unnamed), Mr. Turner second with *Favourite*, Mr. Rowan third with Nellie, Mr. Douglas fourth with Liddington's *Favourite*, and Mr. Phillips fifth with Nellie. Rose, heavy edge.—Mr. Turner first with Mrs. Payne and fourth with Edith D'Ombain, Mr. Douglas second with Mrs. Payne and third with Mrs. Sharp, and Mr. Rowan fifth with Lady Louisa. Purple, heavy edge.—Mr. Henwood first (variety unnamed), Mr. Turner second with Mrs. Chancellor, Mr. Douglas third and fifth with *Calypso*, and Mr. Lakin fourth with a seedling. Purple, light edge.—Mr. Lakin first with a seedling, Mr. Turner second and fifth with Baroness Burdett Coutts, Mr. Henwood third (this exhibitor should name his flowers), Mr. Headland fourth with *Pride of Leyton*. Red, heavy edge.—Mr. Douglas first and second with Brunette, Mr. Turner third and fourth with *Princess of Wales*, and Mr. Henwood fifth. Red, light edge.—Mr. Douglas first and fifth with Mrs. Gorton, Mr. Rowan second with the same variety, Mr. Phillips third and fourth with Thos. William. Yellow grounds.—Mr. Douglas first and second with *Remembrance* (a beautiful variety, delicately edged with rose, for which a first-class

certificate was recommended), Mr. Turner third with Agnes Chambers, Mr. Henwood fourth with Agnes Chambers, and fifth with Annie Douglas.

The premier Picotee in the Show was the beautiful example of Mrs. Payne in Mr. Turner's second prize stand of twenty-four. It was in almost faultless flower, large, well filled, and finely formed.

MISCELLANEOUS, SELFS AND FANCIES.

This section closely corresponded with the former two. There were five stands of twenty-four, the best coming from Mr. Turner, a splendid lot of flowers, finely developed, clean, and very richly coloured. The varieties were:—Back row: *Germania* (2), *Comte de Chambord*, Viscountess Down, Rose Celestial, and a purple seedling. Second row: Viscountess Down, Mrs. Harding, The Governor, Dazzle, a purplish crimson seedling, and Lady Rose Molyneux. Third row: Dazzle, Constance, Purple Emperor, Rose Celestial, Mrs. Harding, and Mrs. Payne. Front row: Lady Rose Molyneux, a purple seedling, Fred, Mrs. Payne, Searlet Gem, and Purple Emperor. Mr. Douglas was second, but some points in the rear; his stand was a little uneven, but contained several exceptionally fine flowers. Mr. F. Hooper was third; Mr. G. Hooper, 7, Cambridge Place, Widcombe, Bath, fourth; and Mr. R. Dean, Ealing, who showed undressed seedlings from the open ground, fifth.

There were no less than fourteen stands of twelve, and they formed a rich display. Mr. Henwood won with a beautiful collection, the varieties being Colonial Beauty, Gladys, Joe Willett, Black Knight, Purple Emperor, Mrs. Rowan, Rose Celestial, Colonial Beauty, Ada, Rob Roy, Sir F. Roberts, and Marchioness. Mr. Rowan was a good second with a very bright and beautiful stand; one or two blooms were small, but all very neat and fresh. Mr. Sydenham was third, also showing remarkably well; Mr. W. L. Walker fourth, Mr. Lakin fifth, and Mr. A. J. Sanders sixth. There were seven stands of twelve yellow grounds, Mr. Turner winning with a grand box, comprising Colonial Beauty (2), *Almira* (2), *Dorothy* (2), Agnes Chambers (2), and four seedlings. Mr. Douglas was second with smaller, but neat, well finished blooms; Mr. F. Hooper third, and Mr. Henwood fourth. There were ten stands of sixes, Mr. G. Hooper winning with *Almira*, Agnes Chambers, Annie Douglas, Duchess of Albany, Mrs. Little, and a seedling. Mr. Phillips was second, Mr. Rebbeck third, Mr. J. D. Kew, Southend, fourth, and Mr. Lakin fifth.

With plants in pots (twelve, in pots not exceeding 8½ inches in diameter), Mr. Turner won, Mr. Douglas second, and Mr. Headland third. Among Mr. Douglas' plants was *Ruby*, a very bright and substantial self, for which a first-class certificate was recommended.

Certificates were recommended for the following Carnations and Picotees:—

Ruby (Douglas).—Rich ruby-red self Carnation. Pot plant shown, bearing several large blooms.

Remembrance (Douglas).—Yellow ground Picotee, lightly edged with rose. The best of its class in the Show.

Calypso (Douglas).—Heavy purple edge Picotee, smooth, well-formed substantial flowers.

Souvenir de Headland (Headland).—Light red edge Picotee, petals of great substance, bloom smooth and well formed; a great acquisition.

After the judging was completed luncheon took place at the Hotel Windsor, Dr. Hogg presiding, with Mr. J. Shirley Hibberd in the vice-chair.

MR. SHIRLEY HIBBERD'S LECTURE.

ON the occasion of the Exhibition Mr. Shirley Hibberd gave a brief discourse on the origin of the Florist's Carnation. He began by assuming as a starting point that *Dianthus caryophyllus* is a pure species, and the parent of all our Carnations and Picotees. It has, on the other hand, been assumed by certain botanists that the Carnation is of mixed descent and a mere mongrel of the garden. Some such belief must have prevailed in the days of Shakespeare, for Perdita's objection to Carnations as "Nature's bastards" was intended to be understood by the mixed audience of the theatre, and it suggests not only the prevalence of the belief, but perhaps also the popularity at that time of the Carnation as a garden flower. The wild forms of *Dianthus* that might by any possibility be regarded as the parents of the Carnation are three in number only: The Sweet William may be regarded as the garden form of *Dianthus barbatus*, the Pink may be an improved edition of *Dianthus plumarius*, and the Carnation differs in no essential particulars from the wild form of *Dianthus caryophyllus*, though larger, fuller, richer, and immensely various in colouring. In its general character it stands distinctly apart from *D. barbatus* and *D. plumarius* as free from any taint of other blood, and Perdita's objection has no scientific truth; it is mere sentimentalism. The wild Carnation is registered as occurring at Rochester, Deal, Norwich, Rouen, and places thence southward to the Mediterranean. Bentham ignores it as a British plant, and Watson reports that *D. plumarius* has been mistaken for it, which is not surprising, seeing how nearly alike they are under some circumstances. But *D. caryophyllus* is constant in its characters (which were described), and it never produced Pinks or Sweet Williams, however degenerate the seed might be, while as to time of flowering, it did not usually flower until the Pinks and Sweet Williams had finished their season, a sufficient reason for their so seldom appearing side by side in exhibitions. We have mule Carnations; all the several forms of the flower, whether Cloves, Show flowers, Fancies, or "tree" Carnations, were true to the leading characters of the species, the limits of variation being apparently sharply defined by Nature.

As to the age of this flower, we have a pretty clear history of it for

300 years, but it is more likely to be a thousand than 300 years old as a garden flower. Turner in 1550 spoke of it as less the child of Nature than the product of the labour and wit of man, a statement that certainly suggests that long ere Turner's time the florists had operated on the flower and made it beautiful and popular. Beckmann's assertion that floriculture in Europe dates from the middle of the sixteenth century is simply ridiculous, for Turner and Shakespeare are witnesses to the fact that in their time certain flowers that had long been under cultivation, and had thereby been modified to suit the fancies of the florists, were no rarities, but were common in English gardens. A reasonable assumption in regard to the estimate of the flower by Turner is that it had then been in cultivation as many years as have passed since he wrote the "Herbal" we now so greatly value. This assumption extends the career of the flower as a garden favourite to a period of 700 years. We may reasonably imagine its introduction to be coeval with the coronation of Richard of the Lion Heart, and this idea leads to another, that the Carnation was possibly introduced to Europe and this country by the Crusaders. It is, moreover, of importance to note that the Carnation was valued by the ancients for the flavouring of beverages, and this consideration gives a clue to the meaning of the assertion of Pliny in his xxv. book, that the cantabrica was obtained by the Romans from Spain in the days of Augustus, who entered on the consulship on January 1st, B.C. 33, which carries back the history of the flower as nearly as need be to 2000 years. When Gerard published in 1596, Carnations were plentiful in gardens, and he records obtaining a yellow variety from Poland through the kindness of a friend. Parkinson, publishing in 1629, speaks of the varieties as being so numerous that to describe them would be an endless task. Moreover, those figured by Parkinson are of great size and variously spotted and striped; in fact, so far removed from the wild form of *D. caryophyllus* as to assert for themselves long occupation of the garden as subjects of the florist's patient care. Rea, in his "Florilege," 1676, gives a list of 360 sorts, remarking that they were raised in Holland, and brought thence to London. Lately, said Mr. Hibberd, I have submitted to certain friends a list of 320 varieties of Carnations that were conspicuous in prize lists in the year 1822, and these friends declare there is not one of them in cultivation at the present time; and yet the improvement, or say alteration, of the flower is accomplished but slowly. The varieties figured by Parkinson show how in his time the stripes were passing outward to the edge to form the Picotee; and the bizarre Carnation, figured in the "Botanical Magazine" in the year 1788, is of such high quality that it might be put on the show table to-day with a fair chance of winning, proving that 100 years of work do not greatly affect the flower as regards its technical qualities, a fact strikingly illustrative of its possible high antiquity; and yet through the long period of its occupancy of the garden we have no evidence that at any time it has deviated in any degree from its typical characters as to suggest hybridisation. All the varieties we hear of and see appear to be genuine representatives of *Dianthus caryophyllus* alone. They are varieties resulting from cross-breeding, without the aid of other blood; true hybrids of the Carnation may be said to be unknown.

The lecture was illustrated by plants and diagrams of an interesting nature, one object of which was to demonstrate that the wire-edge Picotee had been formed in precisely the same manner as the edged Auricula by the gradual pushing out of the colour to the edge, and refining it there from radial spots to a close sharp line.



EVENTS OF THE WEEK.—To-day (Thursday) there are Shows at Castle Ashby, Hereford, Luton (second day), Southwell, and Trentham, also the Exhibition of the Surrey Floricultural Society in the grounds of Casino House, Herne Hill (second day). On Friday, July 26th, Alderley and Wilms'ow, on the 27th Crewe, and there will also be a general meeting of the Royal Botanic Society on the latter day.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Society held last Tuesday, Dr. Robert Hogg in the chair, the following candidates were duly elected Fellows:—viz., Henry Appleby, Charles Blick, James Butler, J. Charlesworth, Richard V. Coleman, W. F. Dart, Thos. Freeman, Miss Hardcastle, Hon. W. F. B. Massey-Mainwaring, Frederick Pitman, S. Pratt, Philip Scott, Martin Ridley Smith, Professor Sidney H. Vines, F.R.S., Edward Thomas Whitaker, and Rev. A. Thorold Wood.

HEAVY RAINFALL.—Just too late for insertion last week, we received a note from Mr. E. Wallis, Hamills Park Gardens, Buntingford, Herts, stating that 2.35 inches of rain fell in nine and a half hours on the night of the 12th inst., and it thoroughly cleansed trees from caterpillars and insects, with which they were infested.

— NOBLE STRAWBERRY.—A correspondent, while recognising the merits of this fine early Strawberry, doubts if the flesh is not too soft and tender for the fruit travelling well, and suggests that the experience of Strawberry growers on this point would be welcome to many readers.

— LONG BROAD BEANS.—In reference to Mr. H. W. Ward's reply to Mr. Heard on this subject, permit me to say the variety grown at Machen House is Wheeler's Giant Wonder. We have it under ordinary cultivation producing on the average twelve pods on each stalk, with from five to nine large dark green beans in each pod.—A. MCKINNON, *Machen House*.

— FLORIFEROUS LILIUM.—Mr. E. Butts writes:—"In the garden of Tudor Cottage, King's Road, Clapham Park, the residence of A. Rawlinson, Esq., there is now flowering a *Lilium auratum* bearing what I believe to be an unusual number of flowers. The bulb produced four growths carrying respectively 57, 37, 27, 17 flowers—total, 138. The three strongest growths are fasciated; the bulb is growing in a bed of peat among some Rhododendrons, this being the third year of flowering."

— LAXTON'S JUBILEE STRAWBERRY.—Will some of your readers kindly give their experience of this Strawberry? With me it is bearing well, with handsome well-sized fruits and good flavour, and it is a good deal later than President or Sir Joseph Paxton, and Elton Pine is over with me. I am just beginning to gather Jubilee (July 15th).—JAMES BUBB, *Nurseryman, Solihull*.

— DRACÆNAS IN BLOOM.—*Dracæna gracilis* in the conservatory at Brockhurst, East Grinstead, is an interesting object just now. There is one fine plant from the summit of which a flower spike has pushed and drooped to a length of 3½ feet, bearing a thick truss of pinkish lilac flowers. The effect is singular and undeniably attractive.

— ANOTHER conspicuous plant in this conservatory is a globular specimen of the fragrant *RHYNCHOSPERMUM JASMINOIDES*, 4 feet high and through, covered with its white flowers, which perfume the whole structure. The plant was previously trained to a wall, but has been taken down, and now, being potted, forms a very fine object.

— ALEXANDER PEACH.—I was rather surprised to find, on looking over our Peach trees on the open wall, that one I have under the name Alexander is ripe; the next tree to it (Hales' Early) will to appearance not be ripe for a fortnight. I send a fair specimen, the tree being rather heavily cropped.—J. GIBSON, *Draycot*. [Alexander is known as the earliest Peach, but the specimen referred to was crushed or shaken beyond recognition.]

— CEANOTHUS GLOIRE DE VERSAILLES.—As a successional flowering climber to *C. divaricatus* and *C. azureus*, Gloire de Versailles is excellent. It grows quickly, and flowers freely in a favourable position on a wall, a southern aspect being the best. With liberal treatment this is one of the finest of wall plants for flowering at this time of the year. Abundance of water is necessary in dry weather, especially if the wall on which the shoots are trained is built of soft red bricks, as these absorb the moisture from the soil in a surprising manner, much to the detriment of the plants.—E.

— PRESERVING ALLAMANDA BLOOMS.—In the ordinary manner Allamanda blooms do not last long in a cut state—not more than a couple of days as a rule—but they can be made to last quite fresh four and five days. When the blooms are just at their best cut them carefully, so as not to injure the base of the flower stem where it connects with the calyx, which occurs if the flower is pinched off. Place the stem in water; also place a little water in the centre of the bloom. It is not necessary to quite fill the cup of the flower, a couple of teaspoonfuls will be sufficient for the purpose. Neither is it necessary to change the water during the time the blooms are in use.—E. M.

— A COLOURED plate of the NEW ZONAL PELARGONIUM, H. CANNELL, JUNIOR, is published in "Vick's Illustrated Magazine" (American), and in this variety, it is remarked, the florist sees a close attainment to the points of an ideally perfect plant. The flowers are round in form, with overlapping petals, and of large size, the colour is crimson deeply suffused with purple, white eye. On a well grown plant the truss is very large, and at the same time symmetrical. The plant is of dwarf habit, blooms in great profusion, and makes a splendid specimen in the hands of a good cultivator. As a bedding plant it gives a great mass of bloom. It is an advance on other varieties of the

same colour, and will prove an acquisition to the conservatory, the window garden, and the garden bed.

— **ASTWOOD BANK AMATEUR GARDENERS' SOCIETY.**—The ninth annual excursion of the above Society took place on the 8th inst., sixteen members availing themselves of the opportunity of enjoying a day's pleasure, permission having been previously granted by the kindness of Lord Sudeley and Mr. Beach to pay a visit to Toddington Gardens, Sudeley Castle, and the jam factory in connection with Lord Sudeley's fruit farm. The kitchen gardens were first visited, and it was at once seen that an immense addition had been made to the glass, which is chiefly devoted to Tomato growing. About 200 lbs. of fruit had been despatched from one that morning. At the jam factory Mr. Alfred Beach explained the various processes. The Strawberry season being in full swing, some hundreds of hands were employed picking, and the factory is run night and day to cope with the vast crops. To describe in detail what was seen would occupy too much space.—**JAMES HIAM.**

— **NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.**—The members and friends of this Society, to the number of 250, visited Chatsworth House on Thursday last, the delightful Derbyshire home of his Grace the Duke of Devonshire. The party left Nottingham by special train, and on arriving at Rowsley entered twenty brakes and carriages which were waiting, and after a pleasant drive of about four miles arrived at the house, which was thoroughly inspected, a ramble following through the well-kept pleasure gardens, with the magnificent conservatory, the cascade, waterfalls, and fountains. The kitchen gardens were also visited, and crossing the park the house of Mr. Owen Thomas, head gardener, a worthy successor to one of the former gardeners at Chatsworth (the late Sir Joseph Paxton), was reached. The long ranges of greenhouses, vineries, Peach houses, and other glass structures necessary for keeping up a good supply of fruit, vegetables, and flowers were all inspected. The Water Lily house is a sight that cannot be excelled in any garden in England, the leaf of one of the varieties being capable of sustaining the weight of a man on its surface. The whole of the arrangements were admirably carried out by the Secretary of the Society, Mr. Edward Steward.

— **THE Rev. F. Umpleby**, chaplain of the **ANCIENT SOCIETY OF YORK FLORISTS**, conducted on Sunday a special flower service at his church at Osbalwick, York, the main object of which, apart from the primary purpose of worship, was to assist by a collection the Gardeners' Orphan Fund. In his introduction the reverend gentleman mentioned that it was inaugurated in commemoration of Her Majesty's jubilee, and had received almost unprecedented support, having the first year an income of upwards of £1800, Sir Julian Goldsmid, Bart., M.P., being its first President. Its area of usefulness was covered by about ninety district secretaries placed in every part of the country. The text for the sermon was "Consider the Lilies of the field." The simplicity, purity, and utility of Lilies were enlarged upon in an able manner. A large congregation listened to the sermon attentively. An interesting feature on the occasion was the elaborate and tasteful decoration of the interior of the edifice with flowers, sent by the members of the Society. The collection taken amounted to £2 10s., all present being highly pleased with such an interesting service, which together with the beautiful walk of about two miles into the picturesque country was most enjoyable.

— **ROSES AT THE WAKEFIELD PAXTON SOCIETY.**—The annual Exhibition of Roses was recently held at the Paxton Society's rooms at Councillor Lupton's, the Saw Hotel. Councillor Milnes was in the chair, and Mr. G. Bott of Walton, a noted and successful amateur Rose grower, occupied the vice-chair. There was a good attendance of the members. A large and magnificent display of Roses was made, the blooms being of good form and colour and the perfume delicious. Messrs. Calam of the Heath Nurseries, who are very extensive propagators and growers of Roses, and in whose nursery grounds, which are of a good warpy soil, there are at the present time some exceedingly fine specimens, staged a grand lot of blooms, which were well dressed, set up, and named, and so arranged that the various colours and tints harmonised in a manner which gave a most striking and beautiful effect. Mr. W. L. Skinner of the Silcoates Nurseries, who read a most interesting essay on Roses, showed a nice collection. Several of the professional gardeners exhibited some fine blooms, whilst the flowers shown by Mr. Bott of Walton, Mr. Calvert of Wrenthorpe, and others were very much admired. Some Rose growers complained of the mischief done to their Rose trees by the very keen and unexpected frost on

the 1st of October last, which will delay their flowering period for a couple of months, whilst on the other hand some growers said the hot and dry season had caused their trees to bloom earlier than usual. Mr. Skinner, in his essay, dwelt upon the various modes of propagating Roses by seeds, cuttings, and budding, and he also described the most suitable soil for these favourite and rich feeding plants, gave much information as to how to plant Rose trees, and he recommended as most suitable for growing in this district dwarf Hybrid Perpetuals. Some discussion followed the reading of the paper, in which various methods were recommended to Rose growers for getting rid of insect pests, mildew, &c. On the motion of Mr. George Gill, seconded by Mr. Squire Pickersgill, a hearty vote of thanks was given to Mr. Skinner for his paper and to the exhibitors of Roses.

TOMATOES IN POTS.

THE engraving represents one of the plants grown at Chiswick, which attracted the attention of gardeners at a recent meeting of the



FIG. 9.—TOMATO ADVANCER.

Royal Horticultural Society. It will be seen that good culture is displayed in its production, and readily conceived that as covered with rich red fruit such plants happily combine beauty with utility. The variety sketched is Advancer, a smooth red fruit of good quality. We have been favoured with the following notes on cultivation by Mr. W. Summers, the able foreman at Chiswick.

"The seed was sown on January 16th in a warm pit, and the seedlings kept as near the glass as possible. They were first potted three into a 48 in light soil, and when ready divided and placed in the fruiting pots, 9-inch, at the end of March; the plants were then about 6 inches high. The soil consisted of two parts loam and one decayed

manure, with wood ashes and sand. The pots were only about half filled with soil, thus leaving plenty of space for top-dressing. The plants if well managed show the first bunch of flowers just above the pot, thus producing fruit from the bottom of the plant. No more water is given than is needed, and the atmosphere is kept as dry as possible consistently with the growth of the plant.

"The flowers were fertilised every day with a camel-hair brush. This is a great help in setting the fruit, especially early in the season when it is not possible to ventilate very freely. After the first bunch of fruit is set the plants were top-dressed, using a richer soil, also a sprinkling of Thomson's manure, which suits them admirably. Future top-dressings were applied as required, using the same soil as before. No liquid manure was used. All side shoots were taken off as soon as they appeared, the single stem system being the best, especially for pot culture. It is important that as much air as possible be given, as it keeps the plants sturdy and helps to set the fruit, and care must be taken in watering, as plants in pots must not be allowed to suffer, though it is quite a mistake to suppose that the Tomato requires so much water as is generally supposed."

The plant when sketched was about 4 feet high, and was bearing fifty good fruits, but the whole of them, for obvious reasons, are not shown.



GLoucestershire ROSE SOCIETY.

WILL you allow me to correct an error of an otherwise friendly critic upon the Gloucester Rose Show in your paper of last week? He describes us as belonging to one point only of the compass of the county, and not, as we wish to be, the Gloucestershire Rose Society. It is also only true to say that the Society was inaugurated under the auspices of a few ladies, whose names are now in the list of President and Patronesses. The Society bids fair to be strong in the best influences, which every true lover of the Rose would desire. We could scarcely wish for greater success than that which has been achieved for us. If you are able to publish this note I shall be grateful for the record of our thanks to those through whom only this success was possible to us. —THOMAS HOLBROW, *Hon. Sec.*

CHRISTLETON.—JULY 11TH.

THIS Show, originally fixed for July 23rd, was held in the Rectory Field at Christleton, two miles from Chester, on the date named. The day was brilliantly fine, a large company came to see the Roses, and everything passed off most successfully. In point of quality the Show fell rather below its usual high mark owing to the retirement of Mr. T. B. Hall, whose Roses have always been a great feature here, and the absence of the large growers at other shows held on the same day. Still the general average was very good, and it would be difficult to name a more pleasant Show, whether looked at from an exhibitor's or a visitor's standpoint. It is thoroughly well managed, the schedule carefully and liberally drawn up to suit all classes of Rose-growers, and it is held amid very beautiful surroundings.

Nurserymen were not largely represented, only Messrs. Harkness of Badale and Messrs. Dickson of Chester putting in an appearance, and they stood thus in the prize list for thirty-six varieties and twelve triplets. Messrs. Harkness showed fine fresh blooms of Ulrich Brunner, Her Majesty (both fine), Marie Verdier, Reine du Midi, Fisher Holmes, Madame C. Crapet, Marie Rady, François Michelin, A. K. Williams, Merveille de Lyon, Etienne Levet (very good), C. Darwin, Baronne de Rothschild, Prince Arthur, Marie Finger, Alfred Colomb, Violette Bouyer, Alphonse Souper (good), Countess of Rosebery, H. Vernet (fine), Souvenir d'Elise, Rosieriste Jacobs (good), Catherine Mermet, Heinrich Schultheis, Ella Gordon, La France, Général Jacqueminot, Princess Beatrice, Duc de Rohan, Mrs. J. Laing, Charles Lefebvre, Madame Eugène Verdier, Antoine Ducher, Silver Queen, Lord Macaulay, Lady M. Fitzwilliam (all these excellent). Their triplets were Queen of Queens, Marie Baumann, François Michelin, Ulrich Brunner, Mons. E. Y. Teas, Merveille de Lyon, Horace Vernet, La France, Alfred Colomb, Mr. G. Dickson, Heinrich Schultheis, Baronne de Rothschild, and Dupuy Jamain.

In the amateur classes Rev. L. Garnett of Christleton Rectory was unopposed in the principal class for thirty-six varieties, showing a very fair box, in which the best blooms were Comtesse d'Oxford, Marie Baumann, Her Majesty, Marquise de Castellane, Marie Verdier, Violette Bouyer, Comtesse de Camondo, Merveille de Lyon, and Clara Cochet.

In the class for twenty-four varieties Mr. C. J. Dry of Rowton was first with Marquise de Castellane, Marie Baumann (good), Louis Van Houtte (good), Capitaine Christy, A. K. Williams, La France, Etienne

Levet, Baronne de Rothschild, Ulrich Brunner, Alfred Colomb (good), Merveille de Lyon, Marie Rady, Gabriel Luizet, Countess of Rosebery, Lady Mary Fitzwilliam, Xavier Olibo, Dupuy Jamain, Duchesse de Valombrosa, François Michelin, Marguerite de St. Amand, Lord Macaulay, Souvenir d'un Ami (good), Fisher Holmes, and Mary Bennett. Mr. J. G. Churton of Neston was second; Mr. T. Raffles Bulley, Liscard, third.

The competition in the twelves was very keen, six or seven boxes being all of a heap, and all very meritorious. The Misses Squarry, Higher Bebington, were placed first with good blooms of Ulrich Brunner, Captain Christy, Le Havre, Prince Arthur, Etienne Levet, Baronne de Rothschild, Mrs. J. Laing, Xavier Olibo, Dupuy Jamain, Duke of Wellington. Mr. T. W. Crowther of Oxtow, Birkenhead, was second; Lieut.-Col. Standish Hore of St. Asaph third; and Mr. W. E. Hall of Higher Bebington fourth. In sixes also there was a close fight, won finally by Lieut.-Col. Standish Hore with Marie Verdier, Madame L. Delaplace, Marie Baumann, Comtesse de Nadaillac, Caroline Kuster, Le Havre; the Misses Squarry second; and Mr. D. Walford third.

Mr. Desborough Walford of Spital, Birkenhead, easily won the first prize for six blooms of La France (a very good box). Rev. L. Garnett second. For six blooms of any other light or red Rose (not La France) Rev. L. Garnett was first with good examples of Alfred Colomb. Dr. Bell of New Brighton second with Mrs. J. Laing. Rev. L. Garnett also had the best box of white Roses (Merveille de Lyon) Mr. T. Tatham of Wilmslow being second with the same variety.

In the Tea or Noisette class, Rev. L. Garnett was again in front with a good box of twelve as follows—Hon. E. Gifford, Souvenir d'Elise, J. Ducher, Madame H. Jamain, Comtesse de Nadaillac, Innocente Pirola, Madame Cusin, Comtesse Panissa, Bouquet d'Or, Francisca Kruger, The Bride, and Souvenir d'un Ami. Mr. C. J. Day was second. Lieut.-Col. Standish Hore had a walk over for six, and Rev. L. Garnett for four triplets.

Hardy herbaceous flowers have always been a special feature at the Christleton Show, and this year prizes were offered to nurserymen for not less than twenty-four varieties. Messrs. Dickson won first prize with a good stand, conspicuous among their flowers being *Campanula persicifolia alba fl.-pl.*, *Gladiolus The Bride*, and *Gladiolus delicatissimus* (certainly most delicate and charming), also a new hybrid of *Lychnis coronarius*, raised by Mr. A. O. Walker, late of the Lead Works, Chester. This is called by Messrs. Dickson, who hold the stock, *Agrostemma hybrida Walkeri*, and is certainly a most showy plant, a great improvement on its parents. Messrs. Harkness had a very telling exhibit, showing fine masses of *Coreopsis lanceolata*, *Campanula carpatica alba*, *Papaver nudicaule* (all three colours), *Eryngium giganteum* and *amethystinum* (both very fine), but they lacked the variety of Messrs. Dickson's stand, and had to put up with second place.

Among the amateurs Rev. L. Garnett took first place with thirty-six varieties, chief among them being a fine flower of *Iris Kämpferi*, with excellent examples of *Gaillardia grandiflora*, *Scabiosa caucasica*, *Gladiolus ramosus* Queen Victoria, *Chrysanthemum maximum*, *Gladiolus The Bride*, *Bahia lanata*, and *Platycodon grandiflorum album*. Mr. R. L. Garnett, Wyrside, Lancaster, was a good second. In his stand were fine specimens of *Delphinium Rayon de Soleil*, *Chrysanthemum maximum*, *Gentiana septemfida*, and *Lilium chalcedonicum*.

Mr. Townsend Mee was first with twenty-four varieties, a fine showy stand, in which *Lathyrus Sibthorpi* attracted much attention from experts. Mr. D. Large of Christleton was second; Mr. D. Walford of Spital third. In the class for twelve varieties, Mr. J. Wynne of Waverton was first, Mr. J. Major of Waverton second, and Mr. Combes of Christleton third.

NEW BRIGHTON.—JULY 13TH.

THIS Show, as I have before explained, is of a peculiar, yea, I may say a unique one, for while at some shows Roses are sold as at Wirral for the benefit of some charity, this has that solely for its object. A kind-hearted and benevolent doctor, who has a pretty villa residence at this favourite and rapidly rising place on the Cheshire shore of the Mersey, has organised this exclusively for the benefit of some of the local charities, Children's Hospital, Cottage Hospital, and such like, and all the profits of them are devoted to that purpose, and it must have grieved the kind heart of Mr. Bell to have held it on such a day as Saturday, the 13th, when an incessantly wet day must have marred all his hopes and prevented his having the pleasure of handing over a substantial balance to "his children," as he calls the inmates of the Children's Hospital, but such things will and do happen in our fickle climate, while it was especially trying in this year when we have had so much delightful and enjoyable weather.

Despite, however, this unfortunate contretemps, there was a very fine Show, at which some admirable flowers were staged, and here, too, one had the opportunity of seeing Mr. Dickson of the Newtownards firm, whose name is now a household one amongst rosarians as the raiser of those grand flowers Earl of Dufferin, Miss Ethel Brownlow, and others, which will soon become known to English Rose growers. Here, too, the Messrs. Harkness of Yorkshire brought their fine flowers. Messrs. Cranston showed in the style which reminds us of former days; and although the grand Roses of Mr. T. B. Hall were wanting, Mr. Grant came out with his magnificent blooms, while the local amateurs such as Mr. Desborough Walford, the Misses Squarry, and others, showed that they have learned a good deal by the exhibits which they have from year to year seen, and seldom have I seen so few indifferent

blooms shown, and altogether the Show, though a small one, was a deeply interesting one.

There was a very sharp contest in the nurserymen's class for forty-eight blooms. The race between Messrs. Cranston & Co. and the celebrated Yorkshire firm, who were first and second respectively, was a very close one, while Messrs. Dickson & Sons of Newtownards, Co. Down, Ireland, made an excellent third, especially when one considers the distance from whence they came and the length of time their blooms must have been cut. Messrs. Cranston's stand consisted of the following flowers:—Ulrich Brunner, François Michelin, Louis Van Houtte, La France, Madame Charles Wood (a magnificent bloom, one of the very finest of this flower I have ever seen), Merveille de Lyon, Pierre Notting, Madame Charles Crapelet, Lady Mary Fitzwilliam, Baroness Rothschild, Marie Verdier, Reynolds Hole, Jean Ducher, Exposition de Brie, Queen of Queens, Charles Lefebvre, Paul Neyron, Alfred Colomb (a splendid well-coloured flower), Madame Isaac Pereire, Marie Rady (a superb bloom), Duchesse de Morny, Le Havre, Etienne Levet, Bartholémy Joubert, Her Majesty, Maréchal Vaillant, Marie Cointet, A. K. Williams, Marie Finger, Lord Macaulay, Niphetos, Sénateur Vaisse, Duc de Rohan, Silver Queen, Rosieriste Jacobs, Souvenir de Paul Neyron, Devienne Lamy, Etoile de Lyon, Souvenir de Paul Neyron, François Louvat, Star of Waltham, Beauty of Waltham, Viscountess Folkestone, Dr. Andry, Maréchal Niel, Prince Arthur, The Bride, Abel Carrière, and Souvenir de la Malmaison (a lovely bloom). In Messrs. Harkness' stand the following were very fine:—Xavier Olibo, Fisher Holmes, The Bride, Duchess of Bedford, and Auguste Rigotard. Messrs. Dickson's stand was especially interesting as containing several of their own seedlings, amongst them Earl of Dufferin (very fine), Countess of Dufferin (a very beautiful light pink flower of great size of petal and good substance), T. W. Girdlestone (another of their new Roses, a large shell-like petal, purplish red, and wonderfully fragrant). They had also fine blooms of Jean Ducher, Madame Hippolyte Jamain, Prosper Laugier, Ulrich Brunner, and Her Majesty. The class for twelve of any one Rose, Messrs. Cranston & Co. were first with Alfred Colomb; Messrs. Dickson second with La France.

In the class for twelve Teas, Messrs. Cranston & Co. were also first with Souvenir de Paul Neyron, Maréchal Niel, Catherine Mermet, Madame Bravy, Souvenir d'Elise, Comtesse de Riga du Pare, The Bride, Madame Cusin, Niphetos, Francisca Kruger, and Innocente Pirola. Messrs. Harkness & Son were second.

In the class for twenty-six blooms Mr. W. J. Grant was first with La France, Louis Van Houtte, Duchesse de Morny, A. K. Williams, Her Majesty, Alfred Colomb, Mdlle. Susanne Rodocanachi, Charles Lefebvre, Général Jacqueminot, Madame Charles Crapelet, Baroness Rothschild, Merveille de Lyon, Prince Arthur, Lady Sheffield (very bright and good), Thomas Mills (very fine), Emily Hausberg, Captain Christy, Abel Carrière, Catherine Mermet, Charles Darwin, Niphetos, Earl of Dufferin, Dupuy Jamain, and Duc de Rohan. Mr. J. G. Churton was second. In the class for eighteen Mr. Grant was again first with Mrs. Baker, Duchesse de Morny, Louis Van Houtte, Her Majesty, Devienne Lamy, Merveille de Lyon, Marie Verdier, Ulrich Brunner, Heinrich Schultheis, Charles Darwin, Alphonse Soupert, Madame Victor Verdier, Charles Lefebvre, Madame Charles Crapelet, Général Jacqueminot, Comtesse de Nadaillac, Abel Carrière, and Le Havre. The Rev. Lionel Garnet, Christleton Rectory, Chester, was second. In the class for twelve Mr. Desborough Walford was first with Marie Baumann, Captain Christy, Duc de Wellington, François Michelin, Duke of Edinburgh, Baroness Rothschild, Charles Lefebvre, Marie Rady, Etienne Levet, Sophie Fropot, and Madame Isaac Pereire. This was an excellent stand, and is another instance of what may be done with a small collection, for Mr. Walford has not more than 100 plants altogether. The Misses Squarry were second with a fine box of Her Majesty, Louis Van Houtte, Etienne Levet, Marquise de Castellane, Baroness Rothschild, Fisher Holmes, La France, Camille Bernardin, Duchess of Bedford, Gabriel Luizet, Charles Lefebvre, Ulrich Brunner (?). Col. Standish Hore of St. Asaph was third. For twelve of any one Rose Mr. W. J. Grant was first with Alfred Colomb, the Rev. Lionel Garnet second with Merveille de Lyon. In the class for twelve Teas Mr. W. J. Grant was first with Maréchal Niel, Madame de Watteville, Niphetos, Etoile de Lyon, Catherine Mermet, Rubens, Comtesse de Nadaillac, Souvenir de Paul Neyron, Adam, Madame Cusin, Caroline Kuster, and Madame Lambard. The Rev. Lionel Garnet was second.

In the class for six for Roses grown in the district W. Bell, Esq., was first with Victor Verdier, Her Majesty, Mrs. John Laing, Louis Van Houtte, Charles Lefebvre, and Merveille de Lyon. Mr. W. Bulley was second.

The gold medal of the N.R.S. was awarded to the best box of twenty-four—Mr. W. J. Grant, the silver medal to Mr. W. J. Grant for the best twelve Teas, and the bronze medal to Mr. Bell for the best six local.

The best twelve perennials were exhibited by Mrs. W. Holland, the second being those of Mr. Bulley, and an extra prize was awarded to the Rev. Lionel Garnett, while a very pretty box of Alpines was contributed (not for competition) by Mr. Bulley. The Messrs. Dicksons of Chester also sent a very beautiful stand of herbaceous plants, containing such flowers as *Centaurea macrocephala*, *Lilium pardalinum*, *L. testaceum*, *L. candidum*, *Aquilegia chrysantha*, *Campanula pelviformis*, *Lychnis chalcedonica* fl.-pl., &c. These stands were much admired, and added greatly to the interest of the Show.—D., Deal.

P.S.—I have since heard that the afternoon cleared off, and that the funds of the Cottage Hospital did not suffer so much as was anticipated.

NATIONAL ROSE SOCIETY AT SHEFFIELD.—JULY 18TH.

SHEFFIELD is, beyond most towns, a city of contrasts. It has a dark side that is unpleasantly apparent, and which at first repels the visitor; but when the town is investigated, and its surroundings explored, it is found that beneath the uninviting exterior there is a pleasant phase such as could not have been imagined when first impressions were formed. Sheffield is an honest straightforward town of thoroughly English character, showing you its black side at once, leaving you to find its pleasant features for yourself, and not beguiling you with a fair prospect and subsequent disappointment. Entering it from the railway on a none too bright morning on Rose show mission, the prospect is little short of appalling. A cloud of smoke overhangs the city, which is enveloped in gloom. One cannot fancy beautiful Roses in such a place; but they were there, as we shall presently see.

As Yorkshire manufacturing towns differ somewhat from those in agricultural districts, so, to some extent, does the Yorkshire character also. Fine fellows are the Yorkshire gardeners, kind, hearty, full of earnestness and enthusiasm. They take a real interest in what they say and do, and when the talk and the work are of flowers there is, so to say, "no holding them." Go ahead they must and will. More than ever have they proved this year that they can hold their own in the strongest Rose company. Those wonderful Bedale growers, Messrs. Harkness and Son, have shown what Yorkshire Roses are this season, and emphasised it by carrying off the chief prize at the chief show of the year. What they have achieved so far from home it might be expected they would repeat in their own county, and Sheffield found them again victorious in the chief classes, and Messrs. Mack of Catterick also showed well.

But there was much of interest in the Show apart from what was done by the home county representatives. From the south came many grand blooms. Messrs. Paul & Son of Cheshunt, the Rev. J. H. Pemberton of Havering-atte-Bower, Essex, and Mr. E. Mawley, Berkhamstead, showed admirably. From the east (Ipswich) came the Rev. A. Foster Melliar, from the west (Hereford) amateur champion W. J. Grant, from the south midlands Mr. Lindsell (Hitchin) and Mr. Prince (Oxford) with his exquisite Teas. Beyond question a thoroughly representative gathering of tried growers, and from which was anticipated, and not in vain, a Show of great merit and rich in interest to the Rose lover. Such indeed it proved, and a large attendance of visitors testified to the interest that is taken in Roses in the many-acred shire.

The Show was held in the Botanical Gardens, which are quite close to the smoky town, though entirely hidden from it, and which, with their trees, lawns, and flower beds, form a most suitable and pleasant venue. Competition in one or two classes was not so brisk as usual, but then the season has been early, and the flowers of many noted growers are practically over. Mr. Frank Cant was a noteworthy absentee. Of the flowers some of the best individual examples were Horace Vernet, La Duchesse de Morny, Victor Hugo, Countess of Rosebery, Alfred Colomb, Madame Susanne Rodocanachi, Earl of Dufferin, Comte de Raimbaud, Etoile de Lyon, The Bride, Souvenir de S. A. Prince, and Francisca Kruger. But we must recall the advice of a famous knight of the circus to "cut the eackle and come to the 'osses." Here then are the awards, in collecting which Mr. E. D. Smith, an intelligent Sheffield gardener and occasional contributor to the Journal, lent valuable assistance.

NURSERYMEN'S CLASSES.

Class 1, seventy-two distinct, single trusses.—The prizes offered were £6, £4, £2, and £1 10s. respectively, and ought to have produced more competition; but it is difficult at this late date to form a strong stand of six dozen blooms. Two only competed, and both stands were fully equal to the best that might be expected considering the lateness of the season. The first prize was won by Messrs. Harkness & Sons, Bedale, Yorks, who, it will be remembered, won in the corresponding class at the Palace Show. As might be expected, they were some points below their earlier form, and Messrs. Paul & Son of the Old Nurseries, Cheshunt, ran them very closely. The blooms of the latter exhibitor were on the whole smaller than those of their rival; but, on the other hand, their stand was not weakened, as were the first prize lot, by some faded blooms. Messrs. Harkness staged the following varieties. Back row:—A. K. Williams, Merveille de Lyon, Marie Baumann, La Duchesse de Morny, Prince Arthur (all of these were splendid blooms, the last-named particularly fine), Souvenir d'Elise Vardon, Alfred Dumesnil, Constantin Fretiakoff, Duke of Wellington, Reine du Midi, Harrison Weir, Heinrich Schultheis, Mons. E. Y. Teas, Comtesse d'Oxford, Duke of Edinburgh, Duc de Montpensier, Marie Rady, Madame Eugène Verdier, Madame C. Wood, Madame Cherot, Xavier Olibo, Marie Verdier, Alphonse Soupert, and Pride of Waltham. Middle row: Captain Christy, Duchess of Bedford (splendid), Silver Queen, Ulrich Brunner, Comtesse de Nadaillac, Countess of Rosebery, Souvenir de Paul Neyron, Duke of Teek (fine full bloom), François Michelin, Maréchal Vaillant, Catherine Mermet, Beauty of Waltham, Niphetos, Reynolds Hole (compact bloom), Caroline Kuster, Madame S. de Rodocanachi, Mrs. George Dixon, Gloire de Bourg-la-Reine (superb), Perle des Jardins, Duchesse de Caylus, La France, Horace Vernet (fresh), Lady Mary Fitzwilliam, and Alfred Colomb. Front row: Fisher Holmes, Marie Cointet, Earl of Pemhroke, Duchesse de Valombresa, Charles Darwin, Grace Darling (good), Mrs. Jowitt, Marguerite de St. Amand, Dupuy Jamain (clear bloom), Innocente Pirola, John Stuart Mill (splendid bloom), The Bride, Madame Hausmann, Emilie Hausburg, Souvenir de Thérèse Levet, Comtesse de Serenye, Rosieriste Jacobs (clear and fresh),

Madame Willermoz, Antoine Ducher, Princess of Wales, Dr. Andry (good), Jean Ducher, Etienne Levet, and Louis Van Houtte (splendid). Messrs. Paul's best flowers were Marshall P. Wilder (a very beautiful bloom), Ollivier Delhomme (well coloured but a trifle rough), Comte de Raimbaud, Mrs. J. Laing (small but beautifully fresh and bright), Lady Helen Stewart (warm, rich crimson), Auguste Rigotard, and Madame Hoste (a fine pale yellow Tea). The back row flowers were a long way in the rear of those in the first prize stand.

Class 2, thirty-six distinct, three trusses of each.—It was stipulated that these triplets should be arranged triangularly, but the general effect was somewhat too stiff. A fair collection from Messrs. Paul & Son won, but where collective effect is aimed at it would be useless to particularise all the varieties. The best were undoubtedly A. K. Williams, Marshall P. Wilder (very fine indeed), Niphotos, and Alfred Colomb. There was no other stand.

Class 3, thirty-six distinct, single trusses.—Messrs. J. Jefferies and Son, Cirencester, here won after a great struggle with Mr. H. Merryweather, Southwell. The first-prize flowers were a little past, hence weakened, but they comprised some very fine examples. The varieties were:—Back row: Mlle. Susanne Rodocanachi, Paul Neyron, Mrs. Charles Wood, Her Majesty (large and full), A. K. Williams, Marie Finger, Fisher Holmes, Etienne Levet, Comte de Raimbaud (splendid), Alphonse Soupert (good), Marie Baumann, and Ulrich Brunner. Middle row: Merveille de Lyon, Louis Van Houtte (splendid), La Duchesse de Morny (good), Brightness of Cheshunt (clear and fresh), Baroness Rothschild, Horace Vernet (splendid), Madame Marie Verdier, Dingée Conard, Niphotos, Grandeur of Cheshunt, Madame Isaac Pereire, and Mons. E. Y. Teas. Front row: Dr. Andry, Mrs. John Laing, Victor Hugo (superb), Countess of Rosebery, Madame Victor Verdier (splendid), Maréchal Niel, Prince Arthur (clear and fresh), Captain Christy, Duke of Teck (good), Innocente Pirola, Le Havre, and Alfred Colomb (large and full). Mr. Merryweather had a fresh and admirable stand, indeed they were conspicuously brighter and clearer than those in the winning collection, and such varieties as Madame Eugène Verdier, Merveille de Lyon, Viscountess Folkestone, Victor Verdier, and Prince Arthur were extremely fine. Mr. G. Prince, Oxford, was third, and Messrs. G. & W. H. Burch, Peterborough, fourth.

Class 4, eighteen distinct, three trusses of each.—The first prize stand in this class came from Messrs. J. Jefferies & Son, Cirencester, who had a very fine lot, the best examples being Madame C. Wood, Alfred Colomb, Marshall P. Wilder, Her Majesty, and Earl of Dufferin. Mr. Merryweather was again second with a bright and well finished stand, and Messrs. Cooling third.

Jubilee Class, thirty-six distinct, single trusses.—Four stands competed in this class, in which the principal prize was a challenge cup, value fifty guineas, to be held one year, and the sum of £3. It was secured with a beautiful stand by Messrs. Harkness & Son, both Teas and H.P.'s being in splendid condition. There was but one weak bloom in the stand, and that was Dr. Andry. Point for point these were stronger than the blooms with which the same firm scored in the largest class. The varieties were as follows. Back row: Ulrich Brunner (large), Duchess of Bedford, May Quennell (well developed), Prince Arthur, Madame Eugène Verdier, Dupuy Jamain (good), La Duchesse de Morny, Madame Hausmann, Countess of Rosebery, Auguste Rigotard, Alfred Dumesnil, and Charles Darwin. Middle row: Marie Baumann, Princess of Wales, Horace Vernet (superb), The Bride, Sir Rowland Hill (fresh), Marie Verdier, Lord Frederick Cavendish, Souvenir d'Elise, Dr. Sewell (good), Niphotos, A. K. Williams, and Princess Beatrice. Front row:—Baronne de Rothschild, Dr. Andry, Madame Susanne Rodocanachi, Alfred Colomb (splendid), Souvenir d'un Ami, Duke of Wellington, Innocente Pirola, Pierre Notting (exquisite), Merveille de Lyon (good), Beauty of Waltham, Silver Queen, and Duke of Edinburgh. The second prize fell to Messrs. Mack & Son, Catterick, who also had a splendid box in the highest degree creditable to them. La Duchesse de Morny was superb, a large, bright, substantial, and beautifully formed bloom. Marie Baumann was in admirable condition too, although not large, and to Merveille de Lyon the same remarks apply. Madame Hausmann, Beauty of Waltham, and Madame Susanne Rodocanachi were also worthy of note. They had, however, two blooms of Exposition de Brie, overlooked apparently both by themselves and the Judges. Messrs. Alex. Dickson & Sons, Newtownards, Co. Down, who very pluckily came a long distance to compete, were third. Their blooms were very large, but with hardly an exception were past. The best were A. K. Williams, Earl of Dufferin, Horace Vernet, and Ulrich Brunner. Mr. G. Prince was fourth.

AMATEURS' CLASSES.

As in the trade section, there was a jubilee class for amateurs; twenty-four blooms, distinct, single trusses, were asked for, and the principal prize was a challenge cup, value fifty guineas, and £3 in cash. The winner was the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, who has come out very strongly thus late in the season. He had a very beautiful stand, comprising some of the best blooms in the Show, and the whole in very bright and fresh condition. They were:—Back row: Victor Hugo (selected as the best amateur's H.P., very richly coloured, symmetrical, and handsome), Earl of Dufferin, Duke of Edinburgh, Louis Van Houtte (good), Annie Wood, Madame Prosper Laugier, Pride of Waltham, Comte de Raimbaud (good). Middle row: Marie Baumann, Magna Charta, Horace Vernet (splendid), Countess of Rosebery, Alfred K. Williams, François Michelin (full), Charles Lefebvre (good), and Alphonse Soupert. Front row: Auguste Rigotard (good),

Duke of Teck (very rich), Captain Christy, Harrison Weir (splendid), Beauty of Waltham, Duchess of Bedford, Alfred Colomb (good), and Prince Arthur (good). Mr. E. B. Lindsell, Hitchin, followed with a beautiful stand, the best examples being A. K. Williams, Victor Hugo, Comtesse de Nadaillac, Etoile de Lyon (best amateur's Tea, a perfect bloom of this lovely Rose), and Horace Vernet. Mr. W. J. Grant, invincible at the Palace Show, was here only third, but he had a neat and telling stand. The fourth prize went to Mr. W. Boyes, Milford.

Class 5, thirty-six distinct, single trusses.—The Rev. J. H. Pemberton was the only exhibitor here. He had a neat and very bright lot of flowers, showing the following varieties, several in admirable condition:—Back row: Alfred K. Williams, Beauty of Waltham, Sénateur Vaisse (good), Duke of Edinburgh (clear and bold), Auguste Rigotard, Exposition de Brie, Charles Lefebvre (very rich), and Countess of Rosebery (fine). Middle row: Comte de Raimbaud (splendid), Pride of Waltham, Madame Victor Verdier (beautiful), Marie Baumann, La France, Xavier Olibo, Comtesse d'Oxford, and Duchess of Bedford. Front row:—Mons. E. Y. Teas, Countess of Camondo, Souvenir de Madame Alfred, Reynolds Hole (rich), Earl of Pembroke, Madame Charles Crapelet, Madame Prosper Laugier, and Abel Carrière.

In Class 6, twelve triplets, there was no competition, but six competed in the following one, which was that for twenty-four single trusses, distinct. The first prize, a silver cup and £2, fell to Mr. Grant, who improved very materially on his previous displays, and had a remarkably strong stand, approaching his best form. He had the following:—Back row: Captain Christy, Alfred Colomb (splendid), Her Majesty, Constantin Fretiakoff, La France, Marie Baumann, Madame Susanne Rodocanachi (good), and Sénateur Vaisse. Middle row: Ulrich Brunner, Marquise de Castellane, A. K. Williams (good), Madame J. Desbois (rather loose), Duke of Edinburgh (rich), La Duchesse de Morny (good), Horace Vernet (fine), and Dr. Andry. Front row: Général Jacqueminot (fine), Prince Arthur, Madame Crapelet (full), Madame Prosper Laugier, Madame de Watteville, Duchess of Bedford, Dupuy Jamain, and Charles Darwin. Messrs. Lindsell and Rev. A. Foster Melliar, Ipswich, had a very close struggle for second place, which eventually fell to the former, but not, presumably, by many points, as there appeared to be very little between them. Mr. Foster Melliar had a splendid Alfred Colomb, Marie Baumann and Marie Van Houtte also being beautiful. Mr. Boyes was fourth. Mr. Edward Mawley, Rose Bank, Berkhamstead, won with twelve, a neat stand, comprising Etienne Levet, Captain Christy, Prince Arthur, Marie Finger, Madame Lambard, Ulrich Brunner, Comtesse d'Oxford, Duke of Wellington, Duke of Connaught, Caroline Kuster, A. K. Williams, and Reynolds Ho'e. Mr. H. V. Machin, Worksop, was second; Miss Mellish, Worksop, third; and Mr. M. Whittle fourth. These were of much the same character and merit, being small, but in good condition.

There was but one competitor in classes 9 and 10, the first prize in the former (six blooms) being won by Mr. C. Knifton, Driffield, with François Michelin, Dr. Andry, A. K. Williams, Captain Christy, Madame G. Luizet, and Louis Van Houtte, and in the latter (six blooms) by Mr. W. H. Haigh, Dore Moor, Sheffield. This and the three following classes were restricted to Roses grown within six miles of the Sheffield Town Hall. Mr. Harry Urton, Green Hill, was first with twelve, and he had a capital stand, comprising La France, Marie Baumann, Merveille de Lyon, Star of Waltham, Oxonian, and Comtesse de Serenye as his best flowers. Mr. Haigh was second. Mr. S. Doncaster, Abbeydale, had a very neat lot in the Sheffield amateurs' class for twelve, and won well, a highly creditable victory; Mr. Morton, Handsworth, being second, and Mr. T. W. Sorby, Ranmoor, third. In the amateurs' class for six Mr. Doncaster was also successful, and he well deserved his honours. He had Her Majesty very large, and Marie Baumann in excellent condition, with good blooms of Xavier Olibo, Merveille de Lyon, Madame Lambard, and Madame de Rothschild, and received a special silver medal for this fine stand. Mr. A. Penistone, Heeley, was second, and Mr. Sorby third.

TEAS AND NOISETTES.

Mr. G. Prince showed these splendidly. In the class for twelve trebles he won with Catherine Mermet, Souvenir de S. A. Prince, Madame Cusin, Francisca Kruger, Hon. Edith Gifford, Madame Lambard, The Bride, Souvenir d'un Ami, Rubens, Marie Sisley, Comtesse de Nadaillac, and Adam. Messrs. Paul & Son were second with a neat stand, more resembling buttonhole flowers. Mr. Prince again won with eighteen. He had:—Back row: Francisca Kruger (very fine), Alba Rosea, Madame Cusin, Souvenir de S. A. Prince, Catherine Mermet (good), and Princess of Wales. Middle row: Hon. Edith Gifford, Madame Lambard (fine), America, Anna Ollivier, Marie Van Houtte, and Souvenir d'un Ami. Front row: Adam, Rubens, Innocente Pirola, Souvenir de Thérèse Levot, The Bride (good), and Jean Ducher (good). They were not large but delightfully fresh. Messrs. Paul again followed. They had small flowers, but none the less a charming stand. Messrs. Jefferies won with twelve blooms, neat examples of Madame Lambard, Rêve d'Or, The Bride, Catherine Mermet, Jean Ducher, Niphotos, Madame de Watteville, Comtesse de Nadaillac, Innocente Pirola, Madame Cusin, Marie Van Houtte, and the Hon. Edith Gifford. Messrs. Burrell and Co., Cambridge, were second, their flowers somewhat faded, and Messrs. Harkness third.

A charming stand from the Rev. F. R. Burnside, Hereford, won the cup and money prize in the amateurs' class for twelve; indeed it was one of the best stands in the Show. The varieties were:—Back row: Madame Cusin (very beautiful), Madame Bravy, Hon. Edith Gifford, Comtesse de Nadaillac (good). Middle row: Jean Ducher (fine), Innocente Pirola,

Souvenir d'un Ami, and Mareelin Rhoda. Front row : Catherine Mermet Jules Finger (splendid), The Bride, and Madame Hippolyte Jamain. Mr. Lindsell was second, and he had Marie Van Houtte, Rubens, and The Bride in admirable trim, but some of the others were faded. Mr. Grant was third with small flowers, and the Rev. J. H. Pemberton fourth. Mr. Mawley won with six, delightful examples of The Bride, Catherine Mermet, Comtesse de Nadaillac, Madame Lambard, and Marie Guillot, with a weak Maréchal Niel. The Rev. A. Foster Melliar followed somewhat closely, Messrs. T. M. Whittle and Boyes being third and fourth.

OPEN.

The first class here was for twelve new Roses, and Messrs. Paul and Son won with Madame T. Ami, Her Majesty, Madame Henry Pereire (splendid), Madame Baulot (fine), Margaret Haywood, Grand Mogul, The Bride, Queen of Autumn, Earl of Dufferin, Mrs. John Laing, Sir Rowland Hill, and Duchess of Albany, H.P.

For twelve of any yellow Rose Mr. Prince was placed first with a beautiful stand of Francisca Kruger, and Messrs. Mack second with Maréchal Niel. Miss Mellish won with whites, showing a neat, fresh, pleasing stand of Niphetos; Mr. Prince being second with Souvenir de S. A. Prince, which also received the Society's gold medal for a new seedling Rose or distinct sport; and Messrs. Harkness third with Merveille de Lyon. With crimsons Mr. Prince won with a fine lot of Alfred Colomb, Messrs. Paul being second with the same variety. We failed to discover the third prize card. Mr. Prince was also first with a dark crimson, showing a beautiful stand of Prince Camille de Rohan; Messrs. Burch being second with Horace Vernet, and Messrs. Paul third with Reynolds Hole.

In Class 25, twelve single trusses, six of any H.P., and six of any Tea or Noisette, Mr. Prince won with The Bride and Alfred Colomb, the two forming a charming box, both being in excellent condition. Messrs. Cooling were second with the same varieties; and Mr. A. Evans, Oxford, third, with the Hon. Edith Gifford and La France.

Messrs. J. & R. Pearson, Chilwell, exhibited boxes of their fine Zonal Pelargoniums.

MANCHESTER—JULY 20TH.

FOR one brief bright day Cottonopolis has been transformed into Roseopolis, the devotees of the Rose—and their name is legion—assembling at the Botanical Gardens, there to participate, either as exhibitors or spectators, in the great Rose Exhibition which plays so important a part in the north of England among fixtures devoted to the queen of flowers, and which is under the experienced direction of Mr. Bruce Findlay. The schedule was in many respects an admirable one; it comprised twenty classes only, divided into three sections—nurserymen, amateurs, and residents within twenty miles of Manchester. In the first the principal class was one for seventy-two distinct, single trusses, with prizes of £7, £5, £3, and £1 10s. respectively; the remainder being thirty-six trebles, eighteen Tea or Noisette trebles, twelve Tea singles, twelve blooms of any white Rose, twelve of any crimson, twelve of any yellow, and three bouquets of Roses. A great grower's schedule it may be said, and it would perhaps have been well to introduce a smaller class, say of forty-eight or thirty-six singles, as the task of raising a seventy-two stand is beyond the power of many excellent trade growers. The advisability of this course was exemplified when the Judges commenced their rounds. There were found to be eight stands of seventy-two blooms, four of which were very weak, yet there were materials for a capital forty-eight stand in every one of them. It is a tremendous task for southern growers to make up a good stand of seventy-two late in the season, and, as will be seen, three out of the four prizewinners were northern and midland growers.

The amateurs' section corresponded with that of the nurserymen, except that thirty-six blooms were asked for in the chief class, and only twelve trebles. In the former, however, the prize money was the same as in the chief nurserymen's class, and consequently liberal enough to tempt many competitors. The district classes, four in number, were twenty-four, twelve, and six single trusses respectively, and one bouquet. It was stipulated that all the bouquets should become the property of the Council, to be sent to the sick wards at the Royal Infirmary. This was a kind and thoughtful act, enabling the sick and needy, who could not see the Show, to taste at least some of the pleasure derivable from inspecting these beautiful and fragrant flowers. The bouquets sent by Messrs. Perkins of Coventry were of rare beauty, fit for a queen to carry, and a lesson in flower arrangement worthy of the closest study.

The prize blooms were of unexpectedly high quality. Perhaps it will be said that with such exhibitors as Messrs. Harkness, Paul, Cocker, Merryweather, Prince, Cranston, Pemberton, and Grant in competition, with whose names high quality is inseparably associated, nothing less could have been anticipated, but there were at least three stands of the highest excellence and some blooms of extraordinary beauty. The stands referred to were the seventy-twos from Messrs. Harkness of Bedale and Cocker of Aberdeen, and the thirty-six triplets from the well known Irish exhibitors, Messrs. Dickson & Son, Newtownards. Messrs. Harkness, who have had an extraordinary series of successes this season, again came out with flying colours, but Messrs. Cocker also showed grandly, and were unfortunate in meeting such powerful opponents in the chief class. In many competitions they would have won with plenty to spare. Equally meritorious were the Irish triplets, indeed it is probable that a stronger lot of flowers were never got together. Amongst the finest individual blooms in the Show were Her Majesty, a finely developed beautifully formed globular flower, smooth and exquisitely coloured, in Messrs. Cocker's stand, a grand Rose shown at its very best; Alfred Dumesnil, a large and magnificently formed

flower; Madame Alphonse Lavallée; The Bride, a lovely example; La Duchesse de Morny, with its exquisite shade of delicate transparent rose finely brought out; Dr. Andry, probably the best example of the year, a glorious flower, all shown by Messrs. Harkness; Etienne Levet, a noble flower; Mrs. J. Laing, a lovely example of this splendid novelty; and Ulrich Brunner, fully equal to Messrs. Mack's silver medal flower at the Crystal Palace. The three last were shown by Messrs. Cocker, and with their grand Her Majesty referred to above formed a quartette of the finest Roses the most exacting critic could wish to see.

Below are particulars of the awards.

NURSERYMEN'S CLASSES.

Class 1, seventy-two distinct, single trusses.—No less than eight competed in this class, the most that have been in competition this season, unless we greatly mistake. Moreover, several of the stands were of a quality to astonish most visitors. Messrs. Harkness of Bedale followed up their Sheffield victory by taking first place with a magnificent stand, almost equal to that which they staged at the Crystal Palace. The strongest blooms were Alfred Dumesnil (a magnificently developed flower), Mrs. Charles Wood, Niphetos (a lovely bloom), Madame Alphonse Lavallée, The Bride (one of the finest shown this year), La Duchesse de Morny (a beautiful bloom; this has been shown very finely of late), A. K. Williams, Madame Willermoz, Alphonse Soupert, Marie Baumann, Charles Darwin, a magnificent Dr. Andry, finely developed, very rich in colour, and perfectly fresh; Catherine Mermet, Général Jacqueminot, John Stuart Mill, and Duke of Wellington. Somewhat weaker were Abel Carrière, Etienne Levet (large but flown), Fisher Holmes (out of colour), and Madame Cusin. Collectively considered the flowers were in splendid condition, and reflected the highest credit on the growers. They were far stronger than at Sheffield. Messrs. J. Cocker & Co., Aberdeen, made a bold bid for first place, and although they were defeated by some points they had a very fine stand; in fact, one that would have won at many shows. The weak part lay in the fact that some of the largest flowers had flown. Such were Alfred Dumesnil, Madame I. Pereire, Duke of Teck, and Madame S. de Rodocanachi. On the other hand, Etienne Levet was superb, the best we have seen this season. Mrs. J. Laing was in beautiful condition, large, beautifully formed, fresh, and with its lovely soft colour admirably shown. Ulrich Brunner was also magnificent. Heinrich Schultheis, Horace Vernet, Barthélemy Joubert, Général Jacqueminot, The Bride, Marie Rady, and Marie Baumann were also noteworthy examples. And last was a glorious example of Her Majesty, such a flower as it is not often given to rosarians to see. The blooms were collectively a little older than those of Messrs. Harkness, but both were grand lots. Messrs. Paul & Son, The Old Nurseries, Cheshunt, were third, but a long way in the rear, the best flowers being Victor Hugo, A. K. Williams, and Alfred Colomb. Mr. Merryweather, of Southwell, with a stand of neat, fresh, and well-finished but small blooms, was fourth, the best examples being Mdlle. Verdier, Comte de Raimbaud, Dupuy Jamain, and Merveille de Lyon. There was nothing especially noteworthy in the remaining stands, but they helped to form a class of extraordinary extent, beauty, and interest.

Class 2, thirty-six distinct, three trusses of each.—A magnificent stand from Messrs. A. Dickson & Sons, Newtownards, Co. Down, one of the best without doubt that has ever been staged, here won with the greatest ease. The flowers were in perfect condition, and even when considered individually bore the closest inspection without losing ground. Madame Prosper Laugier, Merveille de Lyon, Lady Helen Stewart, Marie Baumann, Paul Jamain, Horace Vernet, La Rosière, Countess of Rosebery, A. K. Williams, Madame Alphonse Lavallée (magnificent), and Xavier Olibo, were the best, and the Irish growers have every reason to be proud of their splendid exhibit. Messrs. Harkness & Sons having concentrated their strength on the seventy-two class, were weak here, but were placed second, on which they may consider themselves fortunate, inasmuch as Mr. Prince of Oxford had a far better finished, brighter, cleaner, and smoother stand, and we quite fail to understand his being relegated to third position. Messrs. Cocker & Sons were a good fourth. Another stand was in competition.

Class 3, eighteen Teas or Noisettes, three trusses of each.—Mr. Prince showed in his well-known form here. His is a master hand with the lovely Teas, and he won with a beautiful stand. Marie Van Houtte was lovely; Madame Cusin, though small, was charmingly fresh and well coloured, and The Bride was also very good, while not far behind were Alba Rosea, Comtesse de Nadaillac, Niphetos, and Souvenir de S. A. Prince. Messrs. Cocker & Sons were a good second, Mr. J. Mattock, Oxford, third, and Messrs. D. & W. Croll, Dundee, fourth, all fresh and good stands; indeed this was a capital class.

Class 4, twelve Teas or Noisettes, single trusses.—A charming box of Souvenir d'un Ami, Souvenir de S. A. Prince, Madame de Watteville, Maréchal Niel, The Bride, Catherine Mermet, Francisca Kruger, Rubens, Etoile de Lyon, Hon. Edith Gifford, Madame Lambard, and Innocente Pirola won first prize for Mr. Prince. Mr. Mattock, with Perle des Jardins, Souvenir de Thérèse Levet, and Devonensis as his best flowers, came next, with Messrs. Croll third, and Paul & Son, Cheshunt, fourth.

For twelve of any yellow Rose Mr. Prince was placed first with Francisca Kruger, fresh, neat flowers; Messrs. Croll second with a pleasing stand of Marie Van Houtte; and Messrs. Cocker & Sons third with the same variety, also good. A grand lot of Merveille de Lyon from Messrs. Croll won in the class for twelve whites; they were large, well formed, and fresh flowers. Messrs. Cocker were second, and Messrs.

Dickson, Newtownards, third, both with the same variety. Mr. Prince won with crimsons, a beautiful lot of Alfred Colomb; Messrs. Cranston and Co., Hereford, second with a capital lot of the same variety; and Mr. H. Merryweather third with a finely coloured lot of A. K. Williams. With bouquets Messrs. Perkins & Sons, Coventry, showing some of their best work, won by many points; Mr. Mattock, second; and Messrs. Dicksons, Limited, Chester, third.

AMATEURS' CLASSES.

These were not so well filled as those in the first section, and some classes fell through altogether, but in the principal ones the competition was both plentiful and good. The Rev. J. H. Pemberton, Havering-atte-Bower, Essex, secured, as will be seen, the lion's share of the awards. He has recently been exhibiting in better form than at the beginning of the season, and was very strong both at Sheffield and Manchester.

Class 9, thirty-six distinct, single trusses.—The Rev. J. H. Pemberton had the best stand, showing a capital lot of fresh and well finished flowers, the best being Marie Baumann, Madame Crapelet (superb), Marshall P. Wilder (very fine), Beauty of Waltham, Auguste Rigotard, Victor Hugo, and Charles Lefebvre, the weakest Merveille de Lyon (large but past), Marie Verdier, and Madame Eugène Verdier. Mr. W. J. Grant, Ledbury, though defeated, was represented by a very bright and well coloured stand, containing a beautiful Marshall P. Wilder, Marie Baumann, and Madame Alphonse Lavallée, and was placed second. Mr. S. P. Budd, Bath, third with small but fresh and good flowers. Mr. Boyes, Milford, fourth. For twelve distinct, three trusses of each, the Rev. J. H. Pemberton was again placed first, and well deserved his victory, but Mr. Grant was close on his heels. The remaining prizewinners were as in the other class. With twelve Teas and Noisettes, single trusses, Mr. Pemberton scored his third successive victory, a capital record at a large show. His Teas were of average quality, neat and fresh, the varieties being Jean Ducher, Niphotos, Comtesse de Nadaillac, Anna Ollivier, Madame de Watteville, Francisca Kruger, Catherine Mermet, Souvenir d'un Ami, Belle Lyonnaise, Souvenir d'Elise, Adam, and the Hon. Edith Gifford. Again Mr. Grant was second with Madame Lambard and Amazon, his best; Mr. Budd third, and Mr. Rogers fourth. Hence it will be seen that the placings in all these classes were precisely the same. Mr. Grant of Ledbury was the only exhibitor of twelve crimsons, and was placed first for a neat lot of Alfred Colomb, but no one showed either whites, yellows, or twelve triplets, at least we failed to find any. Mr. A. Heine, Fallowfield, won with a trio of admirable arrangement. Mr. G. Wilkes, Ashton-on-Mersey, second, Mr. Budd third, and Mr. Pemberton fourth.

DISTRICT CLASSES.

Mr. R. G. Burgess, Knutsford, showed very creditably in the class for twenty-four single trusses, and he had excellent blooms of Her Majesty, Madame Victor Verdier, Mrs. John Laing, Lady Mary Fitzwilliam, and Sultan of Zanzibar. Mr. G. Burgess, Tabley, brother of the first named, was second with a small but fresh lot; and Mr. Frank Curtis, Heaton Mersey, third. Mr. G. Burgess won with twelves, his most noteworthy flower being a very richly coloured Madame Prosper Laugier; the others small but fresh. Mr. R. Burgess was second; Mr. A. Hardwick, Ashton-on-Mersey, third; and Mr. S. Barlow, Castleton, fourth. Mr. G. Burgess again won with sixes; second, Mr. R. Burgess; third, Mr. Hardwick; fourth, Mr. Jas. Brown, Heaton Mersey. Mr. Wilkes was first with bouquets, Mr. G. Burgess second, Mr. Heine third, and Mr. Brown fourth.

The following were the most noteworthy miscellaneous exhibits:—Messrs. Dickson, Brown, & Tait, Manchester, had a collection of cut flowers, including Roses and Tomatoes. Mr. S. Barlow was awarded an extra prize for a fine lot of herbaceous flowers, including Campanulas, Delphiniums, Spiræas, Sweet Williams, Phloxes, and Lilliums, also a stand of laced Pinks. Messrs. Harkness were awarded an extra prize for herbaceous flowers, including Iceland Poppies, Gaillardias, Dianthus Napoleon III., Campanula carpatia, Alstroemeria aurantiaca, Coreopsis lanceolata, Antirrhinums, and double Delphiniums. Mr. F. Law, Rochdale, had a large group of cut flowers, including Gladioli, Lilliums, Everlasting Peas, Carnations, and a fine stand of double Dahlias. They were awarded an extra prize. Messrs. Dickson & Robinson, Manchester, were highly commended for a collection of cut flowers; and Messrs. Cocker & Sons were awarded a special prize for a beautiful collection of laced Pinks.

WIRRAL.

"THE stars in their courses fought against" this now well known and popular Rose Show, for although a lowering morning was succeeded by a brilliant day, the broken and unsettled weather of the previous few days had very materially interfered with exhibitors; and when I mention that the Cants, Prince, Cranston, Jefferies, and others were not represented, it will be at once seen that the havoc wrought must have been very great. It is possible, indeed, that the show at Wolverhampton, where large prizes were offered, had attracted some exhibitors, but many confessedly were hindered from coming by the unpropitious character of the weather, while the absence of one local exhibitor, Mr. T. B. Hall of Larkwood, Rockferry, made a gap in the amateurs' division which all who know the character and extent of his exhibits in former years can thoroughly appreciate. The Rev. Lionel Garnet, too, who has always exhibited well here, was unable to place any stands upon the stage owing to his blooms having been spoiled

by the rain. The withdrawal of Mr. Hall has, however, had an encouraging effect on other exhibitors; they were wont to think, and indeed were not far out, that it was leading a forlorn hope to attempt to scale the formidable barrier which he presented to them. They have now, however, taken "heart of grace," and I have no doubt we shall see in another year a further improvement amongst the local exhibitors who, at this Show, surpassed all their previous efforts. It generally happens that the local exhibits are of a very indifferent character, but that is not the case at Wirral, where Roses were shown by those living in the neighbourhood which would have graced any stand from any place.

In the nurserymen's class for seventy-two there were but two competitors, Messrs. Harkness & Son, and Messrs. Paul & Son, to whom the first and second prizes were awarded in the order named. Both were exceedingly good stands for the season, but the Yorkshire flowers were brighter and fresher. The flowers were the following—Duchesse de Montpensier, Captain Christy, Sénateur Vaisse, Madame Montet, Comtesse d'Oxford, Madame Susanne Rodocanachi, Comte de Paris, Alfred Dumesnil, Constantin Fretiakoff, Comte de Raimbaud, The Bride, Sir Rowland Hill, Innocente Pirola, Madame Hippolyte Jamain, Countess of Rosebery, Mrs. John Laing, Marie Verdier, Duc de Wellington, Baroness Rothschild, Charles Darwin, Queen of Queens, Fisher Holmes, Francisca Kruger, Madame Charles Crapelet, Thomas Mills, Ulrich Brunner, Mrs. George Dickson, Mrs. Harry Turner, Etienne Levé, Duchesse de Morny, Auguste Rigotard, Sophie Coquerel, Prince Arthur, Princess Beatrice, Duke of Edinburgh, Souvenir d'Elise, Xavier Olibo, Horace Vernet, Jules Finger, Dupuy Jamain, Louis Van Houtte, La France, Marshall P. Wilder, Emilie Hausburg, Camille Bernardin, Catherine Mermet, Pierre Notting, Lady Sheffield, Marie Baumann, Madame E. Verdier, Harrison Weir, Pride of Waltham, Charles Lefebvre, Heinrich Schultheis, Alfred Colomb, Merveille de Lyon, Madame Angèle Jacquier, Duke of Connaught, Madame de Watteville, Duchess of Bedford, Niphotos, John Stuart Mill, Comtesse de Nadaillac, A. K. Williams, Roisieriste Jacobs, Silver Queen, E. Y. Teas, Lady Mary Fitzwilliam, Madame Hausmann, Reynolds Hole, Dr. Andry, and Madame Gabriel Luizet. Messrs. Paul and Son were, as I have said, second.

In the class for thirty-six trebles Messrs. Paul & Son were the only exhibitors; their flowers were Madame Victor Verdier, Madame Charles Crapelet, Duke of Edinburgh, Niphotos, Comte de Raimbaud, Baroness Reynolds Hole, Sénateur Vaisse, Her Majesty, Marie Rady, Beauty of Waltham, Merveille de Lyon, Duke of Teck, Etienne Levé, A. K. Williams, Mdlle. Susanne Rodocanachi, Charles Lefebvre, Princess of Wales, Ollivier Delhomme, Pride of Waltham, Prince Arthur, Dr. Andry, La France, Camille de Rohan, Ella Gordon, Comtesse de Nadaillac, Maurice Bernardin, Marie Verdier, Marie Rady, Pierre Notting, Marshall P. Wilder, The Bride, Madame Norman Néruda, Mons. E. Regel, Horace Vernet, Baroness Rothschild, and Abel Carrière. In the class for thirty-six singles, Messrs. Alex. Dickson of Newtownards, Co. Down, Ireland, were first with an excellent stand of the following flowers—Ulrich Brunner (a splendid bloom), Marquise de Castellane, Baroness Rothschild, Mrs. John Laing, Sénateur Vaisse, Marie Baumann, Alfred Colomb, Merveille de Lyon, Etienne Levé, Her Majesty, Prosper Laugier, Mdlle. E. Verdier, Emilie Hausburg, Earl of Dufferin (very fine), François Michelin, Marshall P. Wilder, Pride of Waltham, Horace Vernet (a grand bloom), Duchesse de Morny, T. W. Girdlestone (a most promising flower of a bright cerise red), Marie Finger, Madame Alphonse Lavallée (a very Marie Baumann-like flower), Marie Verdier, Général Jacqueminot, Elie Morel, Annie Wood, Egeria, Louis Van Houtte, La France, Beauty of Waltham, Comtesse de Serenye (one of the cleanest blooms of this flower I have ever seen), Triomphe de Caen, Francisca Kruger, Marie Rady, and Abel Carrière. Messrs. Burch & Son of Peterborough were second; and Messrs. Dickson, Limited, Chester, third.

In the class for eighteen trebles, Messrs. Burch were first with Her Majesty, Horace Vernet, Reynolds Hole, Merveille de Lyon, Alfred Colomb, E. Y. Teas, Charles Darwin, Queen of Queens, Louis Van Houtte, Duchess of Bedford, Roisieriste Jacobs, Xavier Olibo, A. K. Williams, Lady Sheffield, Lord Macaulay, Lady Mary Fitzwilliam, Marie Baumann, Marie Verdier, and Horace Vernet. In the class for eighteen Teas, Messrs. Paul & Son were first with Souvenir d'un Ami, Niphotos, Maréchal Niel, Souvenir d'Elise, Madame Cusin, Madame Angèle Jacquier, The Bride, Francisca Kruger, Miss Ethel Brownlow, Alba rosea, Marie Van Houtte, Comtesse de Nadaillac, Catherine Mermet, Perle des Jardins, Madame de Watteville, Jean Ducher, Etoile de Lyon, and Hon. Edith Gifford.

Amongst amateurs Mr. W. J. Grant took the lead, showing in that marvellously fine style which has characterised his flowers this year. He took first prize in the class for thirty-six single blooms, with fine blooms of Marquise de Castellane, Star of Waltham, Heinrich Schultheis, Duke of Edinburgh, Lady Sheffield, Marshall P. Wilder, Annie Wood, Merveille de Lyon, Sénateur Vaisse, Alfred Colomb, Prince Arthur, Reynolds Hole, Countess of Rosebery, La Rosière, Charles Lefebvre, Mdlle. Susanne Rodocanachi, Comte de Raimbaud, Duchesse de Morny, Duchess of Bedford, Madame Charles Crapelet, Duc de Wellington, Baroness Rothschild, Horace Vernet, Ulrich Brunner, Abel Carrière, Madame Cusin, Dingée Conard, Beauty of Waltham, Xavier Olibo, Emilie Hausburg, A. K. Williams, and Le Havre. The Rev. J. H. Pemberton was a good second, and Dr. Budd of Bath third. In the class for twenty-fours Mr. Wm. Boyes of Milford, Derby, was first with Heinrich Schultheis, Louis Van Houtte, François Michelin, Horace Vernet, Merveille de Lyon, Countess of Rosebery, Comte de Raimbaud, Ulrich

Brunner, Duchess of Albany (very like La France), Duchesse de Morny, Xavier Olibo, Star of Waltham, Le Havre, Gloire Lyonnaise (a pretty bloom), Marie Baumann, Camille de Rohan, The Bride, A. K. Williams, Baroness Rothschild, Duc de Wellington, Sophie Fropot, Roisieriste Jacobs (a very fine bloom), Madame Lami, and Ferdinand de Lesseps. In twelve trebles Mr. W. J. Grant was first with Marie Verdier, Dupuy Jamain, Her Majesty, La Rosière (very fine), Ulrich Brunner, La France, Abel Carrière, Général Jacqueminot, Niphetos, Alfred Colomb, Comtesse de Nadaillac, and Charles Darwin.

For twelve Teas Mr. Grant was first with fine blooms of Adam, Marie Van Houtte, Madame Cusin, Caroline Kuster, La Boule d'Or, Catherine Mermet, Comtesse de Nadaillac, Maréchal Niel, Souvenir de Thérèse Levet, Madame de Watteville, Niphetos, and Souvenir d'un Ami. The Rev. J. H. Pemberton was a good second. In the class for any one light Rose Mr. J. G. Churton of Neston was first, as he was also in the class for twenty-four varieties, local growers. His flowers were Ulrich Brunner, Madame Gabriel Luizet, Duc de Rohan, Merveille de Lyon, Ernest Prince, Marie Finger, Prince Arthur, Ferdinand de Lesseps, La France, Lord Macaulay, Baroness Rothschild, Louis Van Houtte, Magna Charta, A. K. Williams, Star of Waltham, Her Majesty, Reynolds Hole, Antoine Mouton, Alfred Colomb, and Marie Rady. This box secured the N.R. Society's gold medal. J. Hodgson, Esq., was second. In the class for eighteen single the Rev. Canon Fielden was first with John Stuart Mill, Baroness Rothschild, Beauty of Waltham, Merveille de Lyon, A. K. Williams, Mrs. George Dickson, Marie Rady, Magna Charta, La France, Dupuy Jamain, Madame Gabriel Luizet, Star of Waltham, Captain Christy, Duc de Wellington, Marie Baumann, Fisher Holmes, Sénateur Vaisse, and François Michelin. H. V. Evans, Esq., was second.

In the class for twelves, a very beautiful box of blooms was exhibited by Desborough Walford, Esq., of Spital, consisting of Captain Christy, Duke of Edinburgh (a magnificent bloom), Baroness Rothschild, Marie Baumann, François Michelin, Sophie Fropot, Madame Gabriel Luizet, Charles Lefebvre, Madame Hippolyte Jamain, Le Havre, Etienne Levet, and La Rosière. The bloom of Duke of Edinburgh received the N.R.S.'s silver medal for the best bloom in the amateur classes. Believing, as I do, that the true colour of this fine flower is brilliant scarlet without any shading, I consider this to have been one of the finest blooms of this flower which I have ever seen, and the whole box was a creditable one to have cut from less than a hundred trees. Mr. W. E. Hall was second, and the Misses Squarry third. In the class for six of any one variety T. W. Crowther, Esq., was first with Baroness Rothschild, and Mr. Desborough Walford second with Captain Christy. In the class for six varieties T. R. Buller, Esq., was first with Baroness Rothschild, Comte de Raimbaud, Duchesse de Morny, Duc de Wellington, Merveille de Lyon, and Emilie Hausburg. Dr. Bell was second, and A. J. Greenshields, Esq., third. In the class for six Teas Canon Fielden was first with Madame Lambard, Caroline Kuster, Francisca Kruger, Comte de Paris, and Madame Hippolyte Jamain.

Two of the best boxes of new Roses I have seen for many a long day were contributed by Messrs. Alex. Dickson & Sons of Newtownards and Messrs. Paul & Son of Cheshunt, Messrs. Dickson taking first prize. The fact is that now, instead of being dependent on blooms cut from imported plants which have been worked to death, so many good blooms are now being raised in our own country that we get finer and better blooms. Messrs. Dicksons' stand contained Caroline d'Arden, one of their own raising (a very pretty, large, light coloured flower), Mrs. John Laing, T. W. Girdlestone (another of their seedlings, a bright cerise red with large petals and very fragrant), Duchess of Albany (a deeper coloured La France), Lady Alice (just like Lady Mary Fitzwilliam), Earl of Dufferin (very fine), Her Majesty, Prosper Laugier, Jeanne Dickson (a small bloom of a very promising variety), Silver Queen, Lady Helen Stewart, and Lady William Hill (a very promising light flower of the Pride of Waltham type).

Messrs. Paul & Sons' box contained Prosper Laugier, Her Majesty, Sir Rowland Hill, Madame Norman Néruda, Mrs. John Laing, Madame Henry Persire, Madame Joseph Dubois (a beautiful white flower), and Madame Baulot (very like Alfred Colomb), Madame Hoste, Madame Treyve, Marie, and The Bride.

A very interesting feature of the Exhibition was the division for hardy perennials. Stands were exhibited by the Rev. Lionel Garnet, Desborough Walford, Esq., R. Bullen, Esq., while a very fine collection was exhibited by Messrs. Dickson of Chester. The taste for this class of flowers is evidently increasing in the neighbourhood, and both soil and climate seem suitable for their cultivation.—D., Deal.

HELENSBURGH.—JULY 18TH.

JUST as we are preparing for press we are requested to insert a newspaper report of this Show. We regret our inability to do more than publish the following summary:—"The exhibits amounted to 2113, showing an increase of 695 over last year, and being the largest number since 1883. The number of competitors also showed an increase over last year. As in former years the principal prize was secured by Messrs. Dickson and Sons, Newtownards, County Down, for their stand of sixty blooms, distinct varieties, and the same firm also carried off the prize for the best hybrid Rose in the Show—a fine Alfred Colomb. For Tea Roses, Messrs. D. & W. Croll, Dundee, secured the honours, and were also awarded the prize for the best Tea Rose—a splendid Marie Van Houtte—in the Show; and in the section given to Scotch growers only, the same firm secured the National Rose Society's medal. The gold medal

for amateurs was won by Mr. David Wallace, Lincoln; while Mr. Massland, Helensburgh, was again successful in winning the medal in the section confined to Dumbartonshire."

HORTICULTURAL SHOWS.

WOLVERHAMPTON.

FOR some years Wolverhampton has not had a summer show, but it was thought expedient to hold one this year, and a three-days exhibition was decided upon, and prizes to the amount of about £230 were offered. The days fixed (July 16th, 17th, and 18th) proved to be fine, and the Wolverhampton Public Park—one of the finest in the kingdom, reflecting much credit upon the Superintendent, Mr. Thomas, for its display of flowers just now and excellent keeping—is just the place for a large flower show.

For sixteen stove and greenhouse and ornamental plants, Mr. Cypher, Cheltenham, was first with a grand lot, consisting of Crotons Sunset, 6 feet through; C. Victoria, larger still; C. Thomsoni, superbly coloured; Cycas circinalis, 9 feet high; a grand *Latania borbonica*, *Cordylina indivisa*, a *Phœnocomia prolifera*, wonderfully fine; *Ericas Irbyana* and *Parmentiera rosea*, both extra fine; *Ixoras Frazeri*, regina, and *salicifolia*; excellent plants of *Clerodendron Balfourianum* and *Statice profusa*, and two Palms. Mr. J. Marriott, Coventry, was a good second with fine plants. *Ixora Duffi* was especially noticeable for its large trusses of well coloured flowers; and very good were *Erica Parmentiera rosea* *Statice profusa*, *Erica Shannoni*, and a richly coloured *Croton Johannis*. For six exotic Ferns Mr. Cypher was first with a fine lot, *Cibotiums regale* and *princeps*, *Alsophila australis*, *Dicksonia antarctica*, *Gymnogramma chrysophylla*, and *Microlepia hirta cristata*. Mr. Marriott second, in whose lot was a fine mass of *Hymenophyllum triehomanes*. For six plants in flower Mr. Cypher was again first with *Ericas Jubana* and *Parmentiera rosea*, *Kalosanthos coccinea*, *Allamanda grandiflora*, and *Ixoras Pilgrimi* and *Williamsi*; second, Mr. Marriott. Some very fine Palms were set up. First, Mr. Cypher; second, Mr. Marriott. The first prize for a group, not to exceed 140 square feet, was well won by Mr. W. H. Dyer, gardener to Mrs. Marigold, Edgbaston, Birmingham, but the other groups were much below the standard of merit usually met with.

For forty-eight distinct varieties of Roses, Messrs. Cranston & Co. were first with Ulrich Brunner, La France, Madame Charles Wood, Paul Neyron, Barthelemy Joubert, Dupuy Jamain, Star of Waltham, Heinrich Schultheis, Sénateur Vaisse, Princess Beatrice, Alfred Colomb, François Michelin, Exposition de Bric, Countess of Oxford, Marie Baumann, Duke of Edinburgh. Second row: Madame Charles Crapelet, Roisieriste Jacobs, Merveille de Lyon, Dr. Andry, M. Alfred Dumesnil, Countess of Bedford, Duchesse de Morny, Général Jacqueminot, Madame Marie Finger, Prince Camille de Rohan, Countess of Rosebery, Etienne Levet, Marie Rady, Alphonse Soupert, J. S. Mill, Pierre Notting. Third row: Prince Arthur, Marie Verdier, Eclair, Etendard de Jeanne d'Are, Reynolds Hole, Baroness Rothschild, Louis Van Houtte, Madame Gabriel Luizet, A. K. Williams, Anguste Rigotard, E. Y. Teas, Francisca Kruger, Earl of Pembroke, Captain Christy, Duke of Wellington, and François Levet. Second, Messrs. Harkness and Sons. For thirty-six blooms, first, Messrs. Perkins & Sons, Coventry, with Ulrich Brunner, Louis Van Houtte, Countess of Rosebery, Roisieriste Jacobs, Mrs. John Laing, Dr. Andry, La France, Star of Waltham, Elie Morel, Comtesse de Camando, Marie Baumann, Horace Vernet, Devienne Lamy, François Michelin, Harrison Weir, M. Niel, C. Lefebvre, Marguerite D'Ombraïn, Prince Arthur, Madame E. Verdier, E. Y. Teas, Captain Christy, A. K. Williams, Abel Grand, Marquise de Castellane, Sénateur Vaisse, Merveille de Lyon, Eclair, Beauty of Waltham, Annie Wood, Emilie Hausberg, Charles Darwin, Madame Eugène Verdier, May Quennell, Baroness Rothschild, and Madame Alfred Dumesnil. Second, Messrs. Cranston & Co.; third, Messrs. Harkness & Sons; fourth, Messrs. Dicksons, Chester. In the class for twenty-four Roses, first, Messrs. Perkins & Sons; second, Messrs. Cranston & Co.; third, Messrs. Dicksons. Twelve dark Roses, one sort, first, Messrs. Cranston & Co. with Alfred Colomb; second, Messrs. Dickson with Horace Vernet. For twelve light Roses, one sort, first, Messrs. Cranston with La France; second, Messrs. Dicksons with Merveille de Lyon. All the exhibits we have named were in the open to all class. The Roses were generally very good.

In the gentlemen's gardeners' classes Mr. W. H. Dyer was again first for a group nicely arranged, first for six stove and greenhouse plants, and first for six Ferns. Mr. Marriott, Coventry, staged six good Orchids—viz., grand masses of *Lælia purpurea* and *Cattleya Gaskelliana*, *Odontoglossum vexillarium*, *Cattleya gigas*, *Acridos callosum*, and *Odontoglossum Alexandræ*; only this lot staged. Good Ferns were staged, two lots of four *Coleus*, one lot of six *Fuchsias* of indifferent quality, and a poor display of *Tuberous Begonias*. Mr. R. Willcocks' first-prize lot of six *Zonal Pelargoniums* were well grown. In the cut flower department Mr. J. Marriott was first for twenty-four varieties of cut flowers with a fine lot, and the second-prize lot were good. Bouquets were not well represented. Fruit was a poor display. Some good vegetables were shown, and the amateurs' and cottagers' classes were well filled; but the general arrangements of the Show were very faulty, and need of a master hand in the general arrangements was felt.

The honorary exhibits of the Show were of a very meritorious character. Messrs. Thomas Hewitt & Co. had a good display of cut

herbaceous blooms, Picotees and Carnations, Gaillardias, Ivy-leaf Pelargoniums in pots, and other things. Mr. Arthur Brown, florist, Handsworth (son of the late veteran Sam Brown), had a good lot of Carnations and Picotee blooms. Messrs. Vertegans, Niemand & Co., Edgbaston, a large assortment of cut herbaceous flowers, good Picotees, and Carnations, a bouquet of Picotees, Mushrooms, &c. Messrs. R. Smith & Co., Worcester, Roses and cut herbaceous blooms. Messrs. Cranston & Co. a large display of Roses. Mr. W. Dean, florist, Solihull, a collection of Violas. Mr. R. Lowe, Wolverhampton, and Mr. Knight, Wolverhampton, collections of plants. Messrs. Webb & Sons, Stourbridge, a collection of their new Peas and other vegetables; and Messrs. Sankey & Sons, Bulwell Potteries, had on the ground a prettily fitted rustic cottage, showing off a large display of garden pottery ware, for which this firm is so noted.

BEDFORD AND BEDFORDSHIRE.

THE annual Show of this Society, held at Bedford on the 17th inst., secured the patronage of many of the principal growers of Roses and herbaceous plants in response to offers of prizes open to all England, and indeed this department of the Show becomes yearly more attractive and more successful, the display of cut herbaceous and bulbous flowers having hardly been equalled elsewhere this season, both sides of the centre table of the Rose tent being well filled, and admirably arranged with large bunches of all the best showy and newly introduced plants. The local department for vegetables was also well represented, and more than sustained the reputation the county holds as a producing district for green food, the exhibition of fruit and plants, on the contrary, being weak for this favourable and mansion-studded county. Notable exceptions, however, to this otherwise ineffective part of the Show were six well-grown and finely bloomed Fuchsias from Mr. Galloway, gardener to Miss Rice-Trevor, Bromham Hall; some good Coleus and Ferns from Mr. Robinson, gardener to F. Howard, Esq., Abbey Close, Bedford; a well arranged group of plants from Mr. C. Ellis, gardener to Mrs. Orr, Pemberley, Bedford, and Zonal Geraniums from Mr. Herman, gardener to Griffith Jones, Esq., Goldington, to all of which first prizes were awarded in their respective classes. The fruit, too, from Mr. G. Allis, Old Warden Gardens, well sustained his reputation as a successful grower, and scored for him first prizes for a collection of six kinds, Pines excluded, for white Grapes, Peaches, Nectarines, and Strawberries, the other chief prizes in the fruit classes falling to Mr. Galloway and Mr. Day, gardener to J. Hawkins, Esq., Mayor of Bedford. There was also an interesting and attractive display of wild flowers and grasses, both fresh and dried, botanically named, the competitions being especially strong amongst the young people attending the Bedford Schools, and the Judges were well occupied for several hours in disposing of many well earned awards.

Roses, as an important feature of the Show, were largely staged, chiefly in bright colour, but wanting somewhat in size. In the open class for forty-eight distinct blooms Messrs. G. and W. H. Burch, Peterborough, secured the leading place with a fresh and striking stand, consisting chiefly of H.P.'s, the following varieties being well represented—viz., Reynolds Hole, Duc de Wellington, Comtesse de Camando (a new and fuller Rose of the Charles Lefebvre type), Her Majesty (very fine), Charles Darwin, Mrs. Jno. Laing, Xavier Olibo, Niphetos, Duchess of Bedford, Madame de Watteville, A. K. Williams, Silver Queen (a clear light pink of the Christy type), Madame Victor Verdier, and Horace Vernet. Mr. H. Merryweather, of Southwell Nurseries, Notts, ran close for second, his best blooms being Earl of Dufferin, Pride of Reigate, Viscountess Folkestone, Longwood Rambler, Sir Rowland Hill, and Brilliant (good dark red). Messrs. Paul & Son, Cheshunt, came third with good blooms, but a little past; Lady Helen Stewart (very fine), Madame A. Dumcsnil, Pride of Reigate, and Madame H. Pereire were noticeable amongst the newer varieties in their stand. Mr. J. Mattock, of Headington, Oxford, had probably the best stand intended for this class, but arrived too late for competition. He had very fine blooms of Star of Waltham, Chas. Darwin, Mrs. H. Turner, and Madame Mallet, a distinct light silvery pink with deeply serrated petals. There were also two other exhibits in this class.

Teas were only in moderate and seasonable condition. In the open class for eighteen Messrs. J. Burrell & Co., Cambridge, were placed first, The Bride, Niphetos, and Madame de Watteville being amongst their best blooms. The Rev. W. H. Jackson, Stagsden Vicarage, was second. For twenty-four cut blooms, open to all amateurs, E. B. Lindsell, Esq., Bearton, Hitchin, led with a fine stand, containing Ulrich Brunner, A. K. Williams, Merveille de Lyon, Chas. Darwin, Marie Verdier, Reynolds Hole, Dr. Andry, and Beauty of Waltham, all in beautiful condition. The Rev. W. H. Jackson was second. For twelve Teas and Noisettes, open to amateurs in the same division, Mr. Lindsell was again first, and Mr. Jackson second; and for twelve distinct Roses (open to all amateurs) Mr. G. Moules, Hitchin, came first; and the Rev. W. H. Gall, Hitchin, second. In the local classes for Roses and cut flowers the principal prizewinners were the Rev. W. H. Jackson, Mr. J. T. Green, and Miss Thomas, Bletsoe; the Rev. Paul Wyatt, Mr. L. C. Higgins, and Mr. W. Kingston, Bedford.

The most striking feature of the Show, however, was the open class for thirty-six bunches of cut hardy herbaceous and bulbous flowers, which brought five very striking exhibits. The first prize fell to Messrs. J. Burrell & Co., Cambridge, but the position was hotly contested by Messrs. G. Paul & Son, Cheshunt, who exhibited some very choice new and rare specimens. Messrs. Burrell, however, had large bunches admirably staged, including most of the well-known showy varieties,

Oenothera speciosa and Carnation Mrs. Reynolds Hole being very attractive. In Messrs. Paul's lot the following were very conspicuous—viz., *Potentilla nepalensis*, *Cephalaria alpina*, *Centaurea ruthenium*, *Campanula pelviformis*, *Lilium dalmaticum*, *Physostegia virginiana* alba, and *Teletia cordifolia*. Messrs. Paul also showed a lovely pure white variety of *Epilobium angustifolium*. They were placed second, Mr. H. Sheppard third, and Mrs. Horton, Bedford, fourth.

Vegetables were especially good, and the Potatoes generally well ripened although not large, the first prize for a basket of twelve varieties of vegetables going to Mr. Musgrove, gardener to A. D. Chapman, Esq., Milton Ernest, Bedford, and the second to Mr. C. Ellis; Mr. Robinson taking first for a collection of Potatoes, and Mr. Herman, who had very clean and fine specimens of a white kidney of the Snowdrop type named Vicar of Coghill, second. For a collection of Peas, Mr. Catlin, gardener to P. G. Skipwith, Esq., Bedford, was first, and Mr. Ellis second. For six distinct varieties of vegetables, offered by Messrs. Sutton & Sons, Reading, Mr. Hermon was first, and Mr. Musgrove second. In the classes for amateurs not regularly employing a gardener, the chief prizewinners were Mr. W. Kingston, Bedford, for a very fine collection of Peas, consisting of Evolution, Duke of Albany, Ne Plus Ultra, and Omega; Mr. A. Burton, Biddenham, for a collection of vegetables, and also for plants; Mr. W. Quarry, Bedford, for Roses and cut flowers; J. W. D. Harrison, Esq., Bedford, for bouquets, plants, &c., and the Rev. P. Wyatt for fruit. Mr. Day, gardener to Joshua Hawkins, Esq., taking the Mayor's prize for the best collection of horticultural produce, and first for a fine dish of Tomatoes, and Miss Beatrice Franklin and Miss Tebbs, Bedford, for devices, sprays, &c. In the market gardeners' class Mr. J. Mearry, Bedford, was first for collections of vegetables and fruit, and Messrs. S. Kirby & Son, Kempston, for salad.

A choice and attractive display of Roses, Sweet Peas, Asters, Zinnias, and other cut flowers, not for competition, were set up by Messrs. Laxton Bros., nurserymen, Bedford, and Mr. J. C. Sheppard contributed a handsome group of decorative plants in baskets. Showery weather militated against the financial success of the Exhibition, but in the evening the rain kept off for the visitors to witness the beautiful illuminated river fête, an almost unique and fairy-like scene, well carried out on the River Ouse, and which attracted and gratified large numbers from the neighbouring towns and surrounding district.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Early Forced Trees.*—Those which were started from early December to the new year, whether the varieties are very early, such as Alexander, Waterloo, and Early Beatrice, or later, such as Hales' Early, Early Alfred, Dr. Hogg, A. Bec, Royal George, and Stirling Castle, have been cleared of their fruit. They have had the wood on which the fruit was borne removed, also superfluous growths, so that those retained can have light and air for perfecting the fruit buds and the maturity of the wood, which is encouraged by clean foliage and proper supplies of nutriment. The trees must be cleansed of insects if necessary, and supplied with water, or in the case of weakly trees liquid manure, at the roots. Mulching will also tend to keep the roots active near the surface, and prevent the premature ripening of the foliage. The buds will be sufficiently plumped and the wood sufficiently ripened to allow of the roof lights being removed, which should not be further delayed. This is a commendable practice, not the least of its advantages being the thorough moistening of the border by the autumn rains.

Succession Houses.—Trees started in February have the fruit ripe, and some are still ripening, being later than usual on account of the cold and dull weather that prevailed in the early summer months. The fruit seems, however, to have benefited both in size and quality by the longer time. As the fruit is cleared off cut out the wood that has borne it, and thin the growths where too close, or where they are so close that the foliage cannot have exposure to light and air. Cleanse the trees of dust by means of the syringe or engine with water, and of red spider or other insect pests with an insecticide. Keep the border moist, giving liquid manure if the trees have carried heavy crops, are at all weakly, or do not plump the buds. Stop all laterals to one joint, or allow a little extension if the trees have the blossom buds in an advanced state, preventing premature ripening of the foliage by continuing the root action, though the principal buds must not be forced into growth. When the buds are well formed and the wood well matured, remove the roof lights. The exposure to rains and dew has an invigorating effect.

Trees Swelling their Fruit.—This is the case with those started in March. We find the best results follow attention to three conditions—viz., 1, a border composed of rather strong loam, with some clay marl in it, a source of potash and lime, old mortar rubbish or chalk, which seems to have effect in proportion to the phosphoric acid, some containing as much as 7 per cent; 2, good drainage, neither too wide nor too deep borders, 2 feet sufficing as regards depth, and half the width the

trees have of trellis, duly watered and fed from the surface, the manures being phosphatic—i.e., where there is a tendency to soft growth using mineral as coprolites, and superphosphate ordinarily; 3, the shoots thinly trained; no overcropping or neglect of thinning in the early stages, and a genial atmosphere so as to insure steady progressive growth.

The leaves should be drawn aside and the fruit raised by means of laths across the trellis, so that the apex will be exposed to the light. Water the border inside and outside with liquid manure, and keep the surface mulched with rather lumpy manure. Avoid a close fine surface likely to form a soapy mass, and exclude air. Ventilate early, in fact leave a little air on all night, syringing by 7 A.M., and through the early part of the day ventilate freely. When the sun loses power in the afternoon reduce the ventilation, and raise the temperature to 85° or 90° about 4 P.M. with a good syringing and damping of surfaces, but it must be done with judgment, for when the water hangs for any length of time on the fruit during the last swelling it is liable to damage the skin, causing it to crack, or if not that, it may impart a musty flavour, therefore have the fruits dry before nightfall, and when the day is likely to be dull omit the morning syringing. Directly the fruit commences ripening cease syringing, but afford moisture by damping available surfaces, especially the border whenever it becomes dry, ventilating rather freely, and sufficiently at night to insure a free circulation of air.

Late Houses.—The fruit in these is later than usual; in fact, there will be little need to retard the ripening by having recourse to very abundant night ventilation. In order to assist the swelling observe the conditions laid down in the preceding paragraph. To accelerate the ripening, if required, ventilate rather freely in the early part of the day and till one o'clock, then conserve the heat by reducing the ventilation so as to secure 80° to 85°, and about 4 P.M. close the house, syringing well, and no harm will come if the temperature rise to 90° or 95°, ventilating a little about six o'clock so as to let the pent up moisture escape, and the temperature gradually cool down. Tied down as growths advance, allowing no more than are necessary for next year's fruiting, or for furnishing the trees, letting all have space for development, and the full exposure of the foliage to light and air. Keep laterals stopped to one leaf, also retain growth to attract the sap to the fruit. If there are any gross shoots which push laterals from the leaf buds, cut them back to where the buds remain intact, or if likely to disarrange the equilibrium of the trees, the equalisation of the sap, cut them out altogether. They only tend to promote gumming, imperfect setting, and certain casting of the fruit in stoning. Draw the leaves away from the fruit, raise it from the under side of the trellis, and let it have as much sun and air as possible. Peaches are not much prized unless coloured, the flavour corresponding thereto, other conditions being favourable.

KITCHEN GARDEN.

CABBAGES FOR SPRING.—The spring Cabbage crop is one of our most important, and should be as early and good as possible in March or April. For private use Cabbages are much valued then, and in the market they invariably command remunerative prices. It should, therefore, be the aim of all to make earliness a feature in their culture. This depends to a considerable extent on the time the seed is sown. We have sown at various times, and prefer the end of July or the beginning of August. We are not particular to a day or two one way or the other, but our Cabbage seed will be sown very shortly after the publication of this note. Care should be taken to select a known early variety. The seed rarely fails either sown broadcast or in rows in rich well prepared soil. One of the best positions in the garden should be chosen for the seed bed. Thin sowing gives the most robust plants. When the ground is very dry we open drills, water them well, sow an hour or so afterwards, and cover immediately. This insures rapid and free germination.

TOMATOES.—The season is proving an admirable one for Tomatoes in the open air. We have quantities of fruit ripe on a south wall. There is no secret in their culture, or one of the gamekeepers who put out some of our plants against his cottage would not have such fine ripe fruit as he enjoys. There is no indication of disease, and so long as the growths are kept well thinned fertilisers may be given, but only to plants bearing heavy crops. Any that are not yet in fruit should only have pure water and not too much of this, as a check to luxuriance induces fruitfulness, high feeding encouraging sterility. Expose the fruits to the sun, and cut all those off as fast as they ripen.

VEGETABLE MARROWS AND RIDGE CUCUMBERS.—The warm dry weather has induced these to fruit early and heavily. The tender young Marrows cut in July have been very acceptable. It is only when young and tender that they are good, and if the fruits become so numerous that they cannot all be used they should be cut and disposed of before the skin becomes hard, as when they begin to form seed bearing soon ceases. This also applies to ridge Cucumbers, and it is too early in the season yet to allow either to be checked from such a cause. Should the plants be growing on manure heaps, and producing many superfluous shoots, keep these well thinned, as it is only short-jointed well-exposed shoots that produce fruit at every joint.

ENDIVE.—The Broad-leaved Batavian is a general favourite, as it is hardier than the curled varieties and heavier, while in quality it is as good as any. All who are in favour of Endive for salad should sow freely now, as when sown too late the plants fail to attain the full size and hardiness before the frost comes. The seed may be sown thinly in rows to allow of some of the plants being left permanently, drawing others for transplanting.

EARLY SEED POTATOES.—It is a good plan to leave some of the early Potatoes in the ground for seed till the stems are completely

withered, as the tubers are only then completely ripe; at the same time they must not be left too long, or they will start growing after a rest and rain.

SPENT CROPS.—Many of the midsummer crops are considerably past their best, and ought to be removed without delay to make room for winter Turnips, autumn Spinach, and Greens. Where Peas have been growing in trenches, so soon as they are removed a row of Celery may be put in without any further preparation than clearing the surface. Pea stakes that were new this spring may be stored for use next season, as they are useful the second year to mix in with a few fresh ones.

EARTHING UP CELERY.—We were afraid that the drought would induce many of our Celery plants to form stems, but so far we have not observed any, and the earliest plants are now ready for their first earthing. We begin by giving them a thorough soaking of liquid manure, then a few of the lower leaves are removed, the soil is broken fine and put round each plant without allowing any of it to fall into the centre. To prevent this a piece of matting may be tied round each plant before earthing is commenced, and removed when finished.

AUTUMN-SOWN ONIONS.—The hot weather has suited these, and many of them are of fine size and form, but should rain come they will soon split. This spoils them for keeping or exhibition, and it is a good plan to examine them weekly and draw up the best bulbs before they become deformed. They may be suspended in a cool shed immediately after being taken from the ground.

THE BEE-KEEPER

NOTES ON BEES.

THE HEATHER SEASON.

AFTER welcome rains we hope sunshine will be the rule for some time to come. Few hives will require feeding this year, and as the Heather season is nearly upon us they are in splendid condition for making the best of fine weather. Hives which generally do best at the Heather are those having young queens at their head, with an abundance of brood in large-sized hives. These essentials prevent swarming and secure ample store combs when a honey glut comes, which, as is well known, is greater from Heather than any other bee pasturage. The hives should be secured so that no bees can escape, and ventilated for preventing suffocation and incipient foul brood. Vehicles having light springs should be employed, and shallow frames are suitable for safe travelling and for depriving purposes. Where choice of site can be had always select that most sheltered, as, like covering supers well, it enables the bees to build combs during the nights, which are often colder in August and September than in June or July. The direction hives stand is of less importance provided the wind does not blow hard on their entrances. Do not spare the covering, but have ample, so that the heat of the sun does not penetrate the interior, which is apt to melt the combs, prevent the bees working, and thus greatly lessening the yield of honey.

BEES FOR PROFIT.

That bees yield a profit greater than that derived from any other rural occupation there is no question, but we prefer to see the number of bee-keepers increased rather than extensive and fewer apiaries. There are many striving cottagers who, from the overwhelming number of bees in extensive apiaries in the neighbourhood, are prevented keeping bees in a satisfactory manner.

GOOD SEASONS.

These are always wished for and welcomed, but are sometimes absent. This we cannot help, but often in the poorest season there is a surplus of honey if the management be judicious. We wish everyone to share in the gracious gift of honey, and most families can consume the produce of two or three hives. There is further a large demand for genuine honey of the first quality, but it is to be regretted that by the too lavish use of comb foundation the quality is not often what it might be.

It is well known that some writers like ourselves have encouraged people to engage in bee-keeping. One adviser in a contemporary, after congratulating those bee-keepers who were fortunate in bringing their hives safely through the winter, further congratulates them on the misfortune of their neighbours, adding that if all had

lived "Honey would have been a glut in the market, and unsaleable." If this be really the case is it right to encourage bee-keeping? and would it not be better to cry Halt?

We are of the opinion that bee-keeping as we advise will continue, as it has formerly done, to be a profitable occupation, and that there will always be a demand for superior samples of honey and honeycomb.

WINTER PREPARATIONS.

Never winter bees with less food than will last the stock till May or June next, nor with other than a fertile queen of the current year. These two essentials, and having the hives wind and water tight, all management practically ceases from September till the following May.

TWO SIZES OF HIVES.

We have frequently advised the use of full-sized hives, but there are exceptions. All hives intended for supering or for extracting should for the stock hive be in no less than the three divisions, containing the shallow frames, which are best for transit, extracting, and building up colonies for swarming purposes. One box less does not reduce the hive to a pigmy size, being only a third, which upon a full-sized hive is often at the end of the season full of honey, to be avoided in a hive for swarming.

When storifying hives are managed as directed it is easy to keep them within proper limits, preventing increase. When a storified hive unexpectedly swarms contrary to your wishes, do not return it, but place in a hive fitted with foundation or combs, which in a well-regulated apiary are never absent; transfer the supers from the parent to the swarm at once, and gradually, the combs containing brood and young bees adhering, unless nuclei be wanted. This does not put a stop to the filling of supers, but rather hastens them, as swarms always work with alacrity.

The swarmers will arrive at swarming point from three to four weeks earlier than will those in full-sized hives. This is important, as it gives a supply of young queens early and at the proper time. Where there are a number of swarming hives kept it is advisable to unite two or more. The number kept should not be less than will give sufficient young queens for the present and next season.

To prevent the increase of hives is the desire of many, and can be accomplished in various ways. The old-fashioned method was to allow a first and second swarm to issue, all to work separately throughout the summer; the old stock and the first swarm were taken in the autumn and the bees joined to the second swarm, after the old queen of the prime swarm was destroyed. This insured extra strong hives for wintering and early swarms next spring, and I question if any other system has remunerated the bee-keeper better.

A good plan in keeping bees is to have for every six or ten non-swarmers one swarmer. If increase of hives is desirable more of the latter should be kept. Ten days or so after the hive sends forth its swarm the stock hive ought to be divided into the proper number of nuclei, and placed in juxtaposition to the storified hives, so that bees may not be lost when uniting through changing the site. After the honey season is closed the storified hives may be examined, their queens removed, as well as the surplus filled and sealed combs, surplus drone combs, and some of the oldest combs, for it is a good point in bee management not to allow the combs to be old. Of course, these vacancies will be filled with the fresh combs formed by the nuclei.

Allow a week to pass after the old queen has been deposed, then excise all royal cells. After another day is past the bees and queen of the nucleus may be given to the old stock without further ceremony, but it is wise to cage the queen for a time if the bee-keeper lacks knowledge of the intentions of the bees by their behaviour.

The foregoing is a reliable and good way of preventing the increase of bees, and having extra honey gathering hives next spring.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

L. Späth, Rixdorf, Berlin.—*Bulbs.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Souvenir de Malmaison Carnations (A. B. C).—Your letter did not reach us in time to be satisfactorily answered this week.

Celeriac Failing (Somerset).—We have not the slightest idea where you can procure plants of this vegetable. We do not know that they are grown for sale.

Bury and West Suffolk Show (Alfred Bishop).—Had the report arrived a day sooner it might possibly have been inserted, or some of it, for newspaper reports are rarely suitable for our columns. If we have not made a mistake in counting you won sixteen first prizes, three seconds, and two thirds—a very creditable performance. Your remark about the "duties of the horticultural Press" is perhaps superfluous.

Caterpillars on Pear (J. B. H.).—These are the larvæ of a species of sandfly, *Tenthredo Pyri*; they are sometimes called slug-worms, and are allied to a familiar species which infests the Plum and Cherry. As they undergo pupation in the earth, it is desirable to remove the surface soil around trees that have been attacked. They may be cleared off trees by a wash of tobacco water or lime water, to which some soap is added.

Tomato Leaves Discoloured (Agnesta).—The leaves appear as if the plants had been kept too close and moist, and possibly air has not been admitted to the house sufficiently early in the morning. Dust the leaves with sulphur, do not wholly close the house at night, and commence opening the ventilators wider soon after the sun shines on the house. Do not overwater the plants. Had the flower sent been enclosed with the Tomato leaves it would have arrived fresh, but being sent in a separate sheet of dry paper it was withered. It is perhaps a double *Clarkia*.

Zonal Pelargonium Freak (Bridgwater).—It is not uncommon for a truss of bloom to have other smaller trusses growing out of it, this being a curious freak not easily accounted for. We have noticed it most frequently in vigorous growing semi-double varieties, and at the present time could cut numerous large trusses with several small ones springing out of them somewhat after the fashion of the old hen and chicken Daisies. In all probability the plant that has produced the truss described by you is in robust health, and the root force finds expression in the adventitious flowers.

Striking Moss Rose Cuttings (J. H. M. H.).—Moss Roses are not so easily raised from cuttings as most varieties are, but there is no reason why you should not be successful in establishing some on their own roots. The best form of cuttings are the short half-ripened growths that have just flowered, these being taken off with a heel or small slice of old wood attached, shortened to about 4 inches in length, and the lower leaves and thorns removed. Failing cuttings with heels, cut up long firm growths into 4-inch lengths. Fill well-drained 5-inch pots with sandy loam and dibble in the cuttings firmly round the sides. Place the pots in a pit, frame, or under a handlight. Keep the cuttings moist, close, and shaded from bright sunshine till rooted, then gradually harden off. Pot singly, using sandy loam and small pots, and keep them in cold frames. In the spring the plants may be trusted out in the open ground. They are usually increased by layers.

Layering Lapageria alba (M. H.).—It is useless to attempt raising *Lapageria* from cuttings, the only two sure methods of propagating them are by seed and layering. Seed should be sown very soon after it is taken from the pod, but the bulk of the plants distributed in this country are obtained by layering the long firm growths. Fill either a well drained box or pan with peaty soil, and on this coil one or more long well matured growths. Peg them down into the soil so as to just bury the stem, a peg to every joint, the leaves, however, being above ground, and if kept properly supplied with moisture—that is to say, kept uniformly moist but not saturated, roots, and eventually a young shoot, will be emitted at nearly every joint. When well rooted all may be separated, carefully lifted, and potted off singly. It is a slow process, but a sure one. We believe an expert propagator has rooted *Lapageria* cuttings as a feat of skill, but this method of increase cannot be usefully practised by gardeners.

Chrysanthemum Shoots Eaten (S. S.).—The shoots have arrived quite fresh this time, and they confirm our suspicions that either caterpillars or earwigs, or both, have injured them seriously, and one of the shoots has been punctured near the end with a minute weevil, causing the tip to curl down. You ought to have observed the attacks much sooner and caught the depredators, also applied insecticides. If the best cultivators were not more watchful and prompt in action than you have been they would not win so many prizes. Take off the worst tops and force new shoots as soon as possible, taking care they are not eaten in turn. You ask if soot water would cause injury, while in a reply just above the one to yourself we advised it to be used, and we are not in the habit of advising that which is injurious; applied weak and clear it is beneficial. You may syringe your plants every evening with either a solution of nicotine soap, Gishurst compound, or softsoap and quassia water, as may be convenient, and when the tips of the shoots are wet, dust them with tobacco powder and snuff; but you should catch the enemies as we advised last week.

Azalea indica from Cuttings (Liverpool).—Most of the plants cultivated in this country are obtained by grafting choice varieties on a vigorous growing common Azalea, and in this manner they can be the most quickly grown to a serviceable size. Cuttings are not difficult to strike, and own-root plants are usually the most dwarf in habit. The cuttings should be made from young or this season's growth, which is now sufficiently firm for the purpose. They ought to be about 3 inches long, cut to a joint, and the lower leaves trimmed off. A bellglass will be needed for covering them, and the pot used should be just large enough to enclose this inside of the rim. Well drain the pot, fill up firmly with sandy peat soil, and finish off with a thick surfacing of silver sand. Insert the cuttings thickly, taking care that they touch the bottom of the holes, and to fix them firmly, then give water through a fine rose and cover with the bellglass. A gentle heat, or from 55° to 60°, is necessary, and the cuttings must be carefully shaded. After they are rooted, which is a slow process, remove them to a cooler house, and gradually remove the bellglass. Pot singly in thumb pots, and keep them in a close frame till they have rooted into the fresh soil (fine peat and sand), pinch out their points, and keep them steadily growing, a larger shift being given as needed.

Hand and other Bouquets (O. L., Chester).—Where so many err when making hand bouquets is in crowding the materials together, the flowers crushing against and hiding each other, and this therefore you must carefully avoid. Nor is it wise to use more than two, or at the most three distinct colours, a general mixture being altogether wrong. Select the choicest and most elegant flowers, and where the stems are stout substitute pliable wire stems. Also wire all that have fine stems, including the Maidenhair fronds for surrounding the flowers. Wire suitable for binding, and for light and heavy stems, can be procured from florists or seedsmen. Wire stems are not cumbersome, and, in addition, admit of the flowers being bent in any position. It is surprising how well flowers keep in a bouquet with much of their stems removed, one preserving the other; but in binding the wires to delicate stems, such as Eucharises and Pancratiums, first surround them with either a little soft fresh moss or well moistened cotton wool. The latter ought never to be used unless it is previously moistened, as it is liable to absorb moisture from the flowers. A good central flower should be chosen, nothing being better for the purpose than a perfect half-opened Maréchal Niel, Niphetos, The Bride, Catherine Mermet, or some other Tea Rose of a delicate colour. Pass a wire or two through the tube of these, and fix firmly to a straight piece of hazel wood of near the size round of a lead pencil, this being a good foundation for the handle of a bouquet. Every flower must be bound in separately, and further, kept from wedging in with the aid of fresh, clean, and springy moss, packed behind them without showing on the upper side. Do not let the flowers fall away from the centre too rapidly, a conical bouquet being decidedly faulty; and if a rather large bouquet is needed—and it is useless to form a small one for a flower show—the outer rings of flowers must have extra long stems. After a nicely rounded, well-balanced bouquet has been made, the next proceeding should be to lighten it with the aid of single pips of Stephanotis, Tuberoses, Jessamine, Orchid flowers, Paneratiums, and elegant light green small fronds of Maidenhair Fern, nothing being better than Adiantum gracillimum. Each and all of these should have a wire stem, and be drawn down through the groundwork, and are thus left in a more natural and elegant position than is the case when they are bound in at the same time as the other flowers. That is one of the greatest secrets in bouquet making. Finish off with a good fringe of Maidenhair Fern fronds, and if these are neatly wired they can be made to recurve gracefully over the bouquet paper finally attached. A ladies' spray should be made on a foundation of either a strong Maidenhair frond, or a spray of Asparagus nanus, duly wired. All the flowers used ought also to be very neatly wired, and these again should be choice, elegant, and the colours not much mixed. Small Tea Rose buds are very appropriate for the purpose, these being taken through the centre, the smallest near the point, and surrounded by other flowers, or they may be arranged irregularly over the spray. Young, highly coloured shoots of Tea Roses, notably Sunset, are very effective in sprays. Whatever is used must be neatly bound in with fine wire, and having wire stems, the flowers needing it may be given an upward turn, so as to show them to the best advantage. Sprays are most effective when displayed on a small board covered with black velvet. Gentlemen's buttonhole bouquets ought to be neat, and consist of one or two

colours only. A single tiny creamy white or pale yellow Rose bud, with perhaps a small piece or two of Bouvardia, Forget-me-not, Stephanotis pips, neat Orchid, or some other elegant flower, backed by a frond of Adiantum mundulum, all duly and neatly wired, would be a model. The majority of the buttonhole bouquets shown are too large and common-looking, such as no gentleman of taste would care to wear.

Names of Fruits. (G. H.).—As we have many times stated Peaches and Nectarines cannot be named without good leaves for observing the glands, and information regarding the size of the flowers. The Peach arrived in a shapeless mass.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. H.).—1, *Oncidium longipes*; 2, *Pellionia pulchra*; 3, *Pellionia Daveautiana*; 4, *Polypodium Dryopteris*; 5, *Linaria bipartita*. (Novice).—1, *Centaurea Isnardi*; 2, *Capsella Bursa-pastoris*; 3, *Veronica Buxbaumi*; 4, *Mentha sativa*; 5, *Lysimachia Nummularia*; 9, *Polygonum aviculare*. We only name six varieties, and cannot undertake to give the names of all wild flowers that may be collected. (J. C. M.).—1 and 2, Forms of *Lilium pardalinum*; 3, *L. Martagon*; 4, *Verbascum olympicum*; 5, *Spiraea venusta*; 6, *Campanula lactiflora*. (G. R.).—1, *Achillea Ptarmica flore-pleno*; 2, *Lilium candidum* (for notes on forcing see page 55 last week); 3, one of the many unnamed forms of *Chrysanthemum coronarium*.

COVENT GARDEN MARKET.—JULY 24TH.

Supplies of soft fruit coming shorter. Hothouse goods heavy.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and			Peaches, dozen	3	0 to 12
" Canada, per barrel ..	7	0 to 16	Red Currants, per ½-sieve ..	8	6 to 4
Cherries, ½ sieve	6	0 to 12	Black	6	0 to 5
Grapes, per lb.	0	9 to 3	St. Michael Pine, each ..	2	0 to 6
Lemons, case	10	0 to 16	Strawberries, per lb.	0	3 to 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 3	Lettuce, dozen	0	9 to 1
Asparagus, bundle	2	0 to 5	Mushrooms, punnet	0	6 to 1
Beans, Kidney, per lb.	0	3 to 0	Mustard & Cress, punnet ..	0	2 to 0
Beet, Red, dozen	1	0 to 2	New Potatoes, per cwt.	8	0 to 9
Broccoli, bundle	0	0 to 0	Onions, bustel	3	0 to 4
Brussels Sprouts, ½ sieve ..	0	0 to 0	Parsley, dozen bunches ..	2	0 to 3
Cabbage, dozen	1	6 to 0	Parsnips, dozen	1	0 to 0
Capsicums, per 100	0	0 to 0	Potatoes, per cwt.	4	0 to 5
Carrots, bunch	0	4 to 0	" Kidney, per cwt.	4	0 to 8
Carliflowers, dozen	2	0 to 4	Rhubarb, bundle	0	2 to 0
Celery, bundle	1	6 to 2	Salsify, bundle	1	0 to 1
Coleworts, doz. bunches ..	2	0 to 4	Scorzonera, bundle	1	6 to 0
Cucumbers, each	0	3 to 0	Shallots, per lb.	0	5 to 0
Endive, dozen	1	0 to 2	Spinach, bushel	3	0 to 4
Herbs, bunch	0	2 to 0	Tomatoes, per lb.	0	6 to 0
Leeks, bunch	0	3 to 4	Turnips, bunch	0	4 to 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2	0 to 6	Marguerites, 12 bunches ..	2	9 to 6
Asters (Fr.), per bunch ..	1	0 to 1	Mignonette, 12 bunches ..	3	0 to 6
Bouvardias, bunch	0	6 to 1	Myosotis or Forgetmenots ..		
Cactus, dozen blooms ..	1	6 to 2	doz. bunches	1	6 to 4
Carnations, 12 blooms ..	1	0 to 2	Narciss (various)	0	0 to 0
" 12 bunches	3	0 to 6	Pansies, dozen bunches ..	1	0 to 3
Clove Carnations, 12 bunches	9	0 to 12	Pelargoniums, 12 trusses ..	0	6 to 1
Coriander, doz. bunches ..	1	0 to 4	" scarlet, 12 bunches ..	3	0 to 6
Eucharis, dozen	2	6 to 5	Pæonies, dozen blooms ..	0	0 to 0
Gardenias, 12 blooms ..	2	0 to 4	Pinks (various) 12 bunches ..	3	0 to 6
Gladoli, per bunch	0	6 to 1	Polyanthus, doz. bunches ..	0	0 to 0
Gladoli, per bunch	0	6 to 1	Roses, Moss, doz. bunches ..	6	0 to 12
dozen sprays	1	0 to 1	" (indoor), dozen	0	6 to 1
Iris, dozen bunches	4	0 to 9	" Mixed, doz. bunches ..	3	0 to 6
Lilac, White (French), ..			" Red, dozen bunches ..	4	0 to 9
per bunch	3	0 to 5	" 12 blooms	0	6 to 1
Lilium auratum, 12 blms ..	2	0 to 4	" Tea, white, dozen ..	1	0 to 3
Lilium candidum, 12 blms ..	0	6 to 1	" Yellow	2	0 to 6
" 12 bunches	13	0 to 24	Spiraea, dozen bunches ..	0	0 to 0
Lilium longiflorum, 12 ..			Stephanotis, doz. sprays ..	2	0 to 3
blooms	2	0 to 5	Stocks, dozen bunches ..	3	0 to 6
Lapageria, 12 blooms ..	1	0 to 2	Sweet Peas, doz. bunches ..	2	0 to 4
Maidenhair Fern, doz. ..			Sweet Sultan,	4	0 to 6
bunches	4	0 to 9	Tuberoses, 12 blooms ..	0	6 to 1

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen	4	0 to 9
Arum Lilies, per dozen ..	0	0 to 0	Geraniums, Ivy, doz. ..	3	0 to 5
Arbor vite (golden), dozen	12	0 to 24	Hydrangea, per dozen ..	9	0 to 18
Asters, 12 pots	0	0 to 0	Lobelias, per dozen	3	0 to 6
Begonias, various, per doz.	4	0 to 12	Marguerite Daisy, dozen ..	6	0 to 12
Caladiums, per doz.	9	0 to 18	Mignonette, per dozen ..	3	0 to 6
Calceolarias, per dozen ..	4	0 to 8	Musk, per dozen	2	0 to 4
" Herbaceous	6	0 to 12	Myrtles, dozen	6	0 to 12
Christmas Rose	0	0 to 0	Nasturtiums, per dozen ..	2	6 to 4
Cineraria, per dozen ..	0	0 to 0	Palms, in var., each	2	6 to 21
Cræna terminalis, doz. ..	24	0 to 42	Pelargoniums, scarlet, 12 ..	2	0 to 4
Dracena viridiflora, doz. ..	12	0 to 24	Pelargoniums, per dozen ..	6	0 to 18
Erica Cavendishii, doz. ..	0	0 to 6	Rhodanthus, per dozen ..	6	0 to 9
" various, doz.	12	0 to 24	Saxifraga pyramidalis, ..		
Enonymus, var., dozen ..	6	0 to 12	per dozen	0	0 to 0
Evergreens, in var., dozen	6	0 to 24	Spiraea, per dozen	0	0 to 0
Ferns, in variety, dozen ..	4	0 to 18	" palmata, per doz. ..	0	0 to 0
Ficus elastica, each ..	1	6 to 7	Stocks, per dozen	0	0 to 0
Foliage plants, var., each	2	0 to 10			



SOUND PASTURE.

SINCE writing the article on Pasture Farming, which was published on page 35, we have seen so many examples of neglected pasture in different counties that we return to the subject under another title, in common use enough, but which, nevertheless, has something vague and indefinite about it. The term of "sound pasture" ought not only to include that which is well drained, but is well planted also. Taken in such a comprehensive sense it would become most useful as the recognised standard of really good pasture, free from noxious weeds and stagnant water, rich in fertility, and abounding with the best possible mixture of Grasses and Clovers.

Who has such pasture? The man who laid down his land with the best mixture of seeds ought certainly to have it; but has he? We have seen new pasture almost hidden beneath a wild growth of rampant weeds, which was all the more vexatious because the seed had been sown without a corn crop in order that the plant might sustain no check nor the soil be robbed of fertility by other growth. If only the soil be made thoroughly clean either by means of a bare fallow or autumn and spring cultivation there is no reason why a corn crop should not be taken with it; but it is quite indispensable to give the soil an elaborate preparation beforehand. The only way to render soil really clean is to destroy the roots of perennial weeds, and after each time it is turned over or stirred by plough or cultivator to leave it undisturbed long enough for the germination of all seeds. No fixed rule can be given for cleaning land, the method of doing it must be determined by the state of the weather. In a fine autumn a prompt use of ploughs, cultivators, and harrows, immediately after the clearance of the corn, will enable us to extract all rubbish from the soil and burn it. In less favourable weather it has to be carted off the land. Hand labour, steel forks, and hand rakes are also useful at times, our sole object being to have the soil clean by any and every means at our disposal.

Old foul pasture requires special treatment. After careful examination we may find it worth while to eradicate the weeds by digging or grubbing, and then to break up the bare patches of soil and sow them with Grass and Clover seed. But if the pasture is very foul and the herbage coarse, rank, and worthless it may answer best to pare it, to burn the sods, spread the ashes over the surface, plough them in, and sow a mixture of really good seed for a new pasture. Very coarse herbage is usually an indication of the presence of superfluous moisture in the soil, and drainage is then of necessity an important factor in the process of renovation. When horses and cattle invariably avoid certain portions of pasture it is certain that there is something radically wrong about it, the pasture is unsound, it fails to answer its intended purpose, but probably drainage is all that is required to change the worthless growth into sweet wholesome nutritious food. We have found this to be so in our own practice, and can therefore confidently recommend drainage as the first step to be taken in the cultivation of such unprofitable pasture.

There are certain pests which are best got rid of by grubbing. When the home farm which we now manage came into our hands there were several large patches of Nettles in the pasture, which it was customary for the shepherd to mow occasionally during summer. We at once replaced the scythe with a spade and mattock, had the Nettle roots grubbed, and there was an end of them. Yet the mowing had been done for years, and our remedy was actually regarded with disfavour. The general carelessness about pasture is really incomprehensible. In making a recent

inspection of a farm famous for the excellence of its crops and its superiority to adjoining farms owing to clever management, the only weak point we saw was a small meadow in front of the farmhouse, in which *Ononis* and *Genista tinctoria* (Bastard Broom) had become so thoroughly established that it was a veritable flower garden. The cheerful effect of the blossom in such a position was the only possible excuse for a spoilt pasture, but in this instance we found there was no liking for the flowers, the weeds being regarded as a necessary evil to be kept under by mowing, but not to be got rid of because "they would come."

Many weeds disappear from pasture with drainage and the regular application of manure, but we have found grubbing necessary not only for Nettles, but also for Dock, Broom, *Ononis*, Gorse, Brambles, and we once had actually to grub a lot of stunted Whitethorn which had been suffered to become established with huge thickets of Bramble in an upland pasture. Buttercups, Mint, Chamomile, Garlic, and Tansy all spoil the flavour of milk, and should never be found in the pasture of dairy cows, nor would they be found in any pasture if it were rendered sound and brought under as careful a system of culture as it ought to be.

WORK ON THE HOME FARM.

Such speedy work was made of the haymaking that a little extra care has been required with the stacks, which when built so quickly are apt to settle down in an uneven manner as heating sets in. It is well, therefore, to wait long enough before thatching to allow them to settle, and then re-arrange the top of each stack so as to ensure the proper slope to the roof and a symmetrical appearance to the entire structure. Violent heating occurred in only one stack, the top of which sunk down to a very obtuse angle. By opening the centre to raise the sides and building up the top to the required height with Barley straw the stack was rendered both safe and dry.

Mangolds and early Swedes are now out of hand till autumn, the final hoeing having been given just when the leaves were spreading so far over the space between the rows as to ensure the keeping under of weeds. These crops are very satisfactory, as also later sown Swedes and Turnips bid fair to be, for the recent rain has been much in favour of quick seed germination and speedy plant growth. With such favourable weather for growth all possible plant singling should be done in order that the plant left for the crop may derive full benefit from the rain, and become well established in the soil before there is any risk of harm from drought.

Much of the best corn has been sadly beaten down by heavy rain, and where straw is long and weak it must remain down. It depends now upon the weather of the next three or four weeks whether we are to have a repetition of the sprouted and discoloured corn of last year. The crops generally are excellent, and the short stout straw of Square-head Wheat enables that useful variety to pass erect and unharmed through the storms which beat down sorts with longer and weaker straw. If we get new sorts of Wheat and Barley with larger ears and heavier grain, we also require more substance in the straw to enable it to support the grain in storm and sunshine. We had recently to inspect a Barley field, the growth of which was so weak that much of it could not produce ears. The tenant's grievance was that he had ploughed in a fair dressing of farmyard manure for this Barley, apparently to no purpose. The manure was taken in valuation last Michaelmas, was it worthless? As we walked over the field the odour of wild Mint crushed beneath our feet told us that the land was wet, and we were bound to pronounce that the failure of the crop was caused by water-logged soil, and not by poverty of manure.

METEOROLOGICAL OBSERVATIONS.

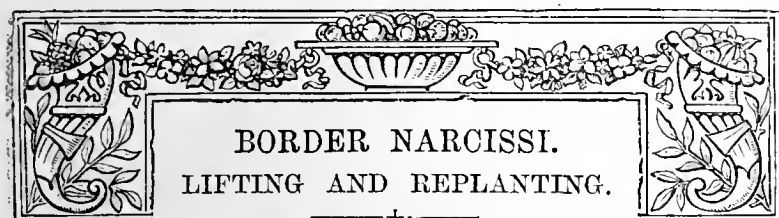
CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain
1889. July.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
Sunday	14	Inches.	deg.	deg.	E.	deg.	deg.	deg.	deg.	In.
Monday	15	29.837	63.7	69.5		63.0	70.6	55.2	125.4	54.8
Tuesday	16	29.906	61.3	55.3	S.W.	62.4	69.2	55.4	116.8	53.6
Wednesday	17	29.867	78.6	52.9	S.W.	61.2	69.8	49.1	122.3	45.6
Thursday	18	29.748	60.2	53.2	N.W.	61.8	61.8	51.8	119.3	48.9
Friday	19	29.947	60.2	55.0	N.	60.9	70.2	53.3	118.0	49.7
Saturday	20	29.946	60.3	52.9	E.	60.8	72.2	46.1	115.4	41.4
		29.813	69.7	57.1	S.E.	60.2	67.9	51.1	108.3	41.9
		29.855	60.7	55.0		61.5	69.7	52.1	118.0	48.4

REMARKS.

- 14th.—Slight showers at intervals, otherwise generally fine; thunder at 10 A.M.
 15th.—Heavy shower at 2 P.M., and slight shower between 1 and 4 P.M., otherwise fine and frequently bright.
 16th.—Bright warm morning; showers about 1.30 P.M. and in evening; fair between.
 17th.—Bright early; frequent thunder and occasional lightning from 11 A.M. to 5.30 P.M., heavy shower at 4.30 P.M., and frequent slight showers.
 18th.—Dull, with spots of rain in morning; bright afternoon and evening.
 19th.—Hazy, with a good deal of cloud in morning; frequently bright in afternoon.
 20th.—Showery morning; fair afternoon and evening.
 A showery week; temperature near the average.—G. J. SYMONS.



BORDER NARCISSI.
LIFTING AND REPLANTING.

ALL strong-growing Narcissi that increase quickly soon suffer from mismanagement, and no variety sooner than the double form of Poeticus. Complaints of the flowers of this variety withering in the sheath and other varieties failing to open are frequent every season. The cause is mainly, if not wholly, due to the crowded state of the bulbs and poverty of the surrounding soil. It is a mistake, and a very common one, to suppose that when Narcissi are once planted they need neither care nor attention afterwards. It is true that for a few years after planting they will do well and give satisfaction when left to their own resources; but directly the bulbs commence crowding each other they cannot attain a natural size, the growth annually becomes weaker, and the flowers and bulbs smaller until the latter fail to bloom or only produce a solitary flower or two of inferior size. To grow Narcissi well they must be lifted and replanted periodically.

If careful note is taken of a patch of bulbs crowded thickly together, and also of one in which the bulbs have been planted singly and have made robust growth, the foliage of the former will be found to have died away two or three weeks earlier than that of the latter; in fact, they are ready for lifting three weeks earlier. No particular variety need be singled out for illustration. The same conditions will be observed whether the kind is Poeticus, its double form; Horsefieldi, Sir Watkin, or the common double yellow Daffodil. The foliage as well as the flowers of crowded plants are puny in comparison with plants that stand singly or nearly so and have room to develop. Those who have Poeticus and its double form only in a crowded state would scarcely recognise them when well grown singly. The comparison is so striking that they have the appearance of being giant forms. To do Narcissi really well they should not be left undisturbed more than three or four years at the most; but this depends upon the variety and the size of the bulbs when they are planted. I am assuming that the bulbs when first planted are strong flowering ones, which commence to increase at once. If small bulbs only are planted two years may elapse before they attain full size and increase commences.

Bulbs that are left for many years in the same position and become seriously crowded are very liable to be attacked by the mite, often so seriously that they do very little good after they are planted singly. Bulbs that are lifted from time to time as they need it, and replanted in fresh ground, are kept healthy and vigorous, and therefore capable of resisting attack. I may be wrong, but I am strongly of opinion that the bulbs must be seriously checked, and their health and constitution impaired, either through poverty, overcrowding, or any other cause before the mite will attack them. If strong bulbs are planted to commence with they should be left undisturbed until the new bulbs they produce attain their full flowering size, when division should again commence. If left any longer they become crowded. This is all that is needed for home decoration, but when the bulbs are grown for the market slightly different treatment must be followed. If the four or five, as the case may be, that spring from the original bulb are left until full size has been attained they will be flat on one side. To obviate this they should be lifted one year earlier, and planted singly: the bulbs have then every chance of developing in all directions, and being symmetrical when lifted.

All the early flowering varieties should be lifted at once, and even late flowering varieties of the Poeticus section, if they are in a crowded state. Those that have been grown singly are not quite ready in the northern parts of the country. The recent heavy rains, after the long spell of dry weather, will soon start roots again into activity. Narcissi do not remain in the ground long in a practically dormant state after the foliage has thoroughly died away. After the roots have started lifting cannot be done without injury to some extent, however quickly or carefully they may be returned to the ground. It is a very great error in management to leave them in the ground until fresh roots have commenced forming. When lifted they should be spread out in the sun to dry, and if thoroughly at rest they will be ready for sorting and cleaning at the end of a week or ten days. Some strongly object to drying these bulbs, and I was told the other day by one person that he would not purchase bulbs of *N. Horsefieldi* unless they were in a growing condition—that is, had started after resting into fresh growth. This is an erroneous idea. Drying the bulbs does not injure them in the least, or those that are kept out of the ground from July to October would be injured past recovery. I believe that the bulbs of Narcissi will bear being kept out of the ground for a greater length of time than the majority of bulbous plants without serious injury. I do not, however, advocate keeping them out of the ground longer than is really necessary, because it is unnatural. If Nature intended that they should enjoy a lengthened period of rest, root activity would not commence when left in the ground so quickly after the old foliage withers. When the bulbs are needed for garden decoration and the flowers for cutting, cleaning and drying the bulbs need not be practised. We have lifted and returned them direct to the ground with the very best results; in fact, we have observed no difference between this method and that of drying them for a short time.

Whatever object the cultivator may have in view the bulbs should be sorted into at least three sizes—that is, freely developed bulbs, those that require another year's growth, and the small ones. Planting the first two sizes may vary according to circumstances; they may be planted singly in beds and borders, or four or five grouped together, the bulbs being a few inches apart. But the small ones should be planted in beds and treated as if they were being grown for sale. For this purpose the first size would be disposed of, the second planted and lifted next July, and so on. The ground selected should be such that has been well cultivated, deeply dug, and heavily manured for a previous crop. Narcissi do splendidly on ground that has grown good Lettuces, early Potatoes, and such crops. If the ground is poor it must be well enriched with manure, but by no means place it in direct contact with the bulbs. A little may be scattered along each row as planting proceeds, or it may be spread on the surface and dug in. I prefer to give a little only at planting time on light soil, scattering in addition what amounts to a good manuring on the surface early in the year, to be washed down to the roots in a natural manner. If the ground has been previously well manured, and the bulbs are only to be grown on it for one year, no manure need be given. The bulbs should be planted in rows 1 foot apart, 3 inches asunder in the row, and about 2 inches below the surface. This allows of the ground being kept free from weeds by a free use of the hoe during the growing season. All small growing *Narcissus* may be planted less than half that distance apart, but nothing is gained by crowding the rows closely together, so that weeding is rendered difficult. The small bulbs are ready for lifting again when they attain full size, which may be two, three, or four years, according to their size at planting time and the variety.

Such fine varieties as Sir Watkin, Emperor, Empress, Horsefieldi, and others are amongst the most beautiful bulbous plants that can be grown for conservatory decoration in spring. No doubt in the near future they will be utilised for this purpose much more largely than in the past. The flowers are charming in beds and

borders outside, but they are richer and more delicate when grown under glass. Even the old common double Daffodil forces well, and in appearance is more striking under glass than outside. In the neighbourhood of towns, when the flowers of such choice varieties as *Horsefieldi* are needed for cutting, the bulbs should be planted so that they can be covered with a frame. This protection is only needed during the last two or three weeks of development. Very frequently the outer portion of the perianth is destroyed after rain by being spotted with soot. This will take place long before the flowers open. However clean the inside portion of the flower may be, its appearance is marred if the outer portion is but slightly damaged. When these kinds are grown in pots the potting of the bulbs should not be delayed until October. To attain the best results they should be given abundance of time to make roots, and come forward gently in all stages of growth. The sooner they are potted after they are lifted and dried the better. They can, it is true, be lifted from the open border in October, and potted for flowering in spring, but the flowers are smaller, and the bulbs suffer materially by such rough and ready methods of culture. If the well-being of the bulbs for future use is considered, and large well-developed flowers are appreciated, potting should be done early, placing four or five bulbs in 5 and 6-inch pots. The pots should be buried beneath at least 4 inches of ashes, in some position where the sun does not strike with force. The soil in the pots will then remain sufficiently moist to stimulate growth and root activity without recourse to watering before it is necessary to remove the bulbs from the plunging material.

To do these bulbs well for flowering in pots they should be grown well until they approach a large flowering size. After they have flowered, the bulbs with the soil attached should be laid into the ground outside until they ripen, then being planted in beds for yielding stock.—NORTHERNER.

NOTES FROM A HERTS GARDEN.

ROSES ON THEIR OWN ROOTS.

OUR soil is strong, a tenacious loam over clay. It ought to be a Briar soil, and is if the free growth and floriferous character of wildlings be taken as conclusive; yet Roses do not thrive well on the Briar, especially standards, which sicken and die, except some of the free-growing kinds of Hybrid Perpetuals, and that most popular of Teas *Gloire de Dijon*, which is equally if not more vigorous and free blooming on its own roots than on the Briar. We have some trees of this Rose on the Briar with stems about 2½ feet high and 10 inches in circumference, covering a large extent of trellis, and annually loaded at one time with hundreds of fine blooms. For general purposes I prefer Roses on their own roots. They grow more freely than on any kind of stock when once they become established, and they bloom very freely. The peculiarity of Roses on their own roots is that of their pushing strong shoots from the base of the older growths, and even from the root stem, so that there is no difficulty in keeping up a succession of young vigorous growths and a corresponding profusion of fine blooms, for it is easy to cut away weakly and attenuated growths and train others in their place. Not the least of the advantages of Roses on their own roots is that of their withstanding the vicissitudes of our climate and the rigours of winter better than similar varieties on alien stocks, for, no matter what may happen, it is certain that there is a reciprocity of action between the roots and the head, and no matter how adverse the winter the growths are not injured below the snow line or the surface of the mulch, consequently Roses on their own roots survive cold that is fatal to the same kinds worked on Briar, Manetti, or other stocks.

The cuttings are inserted in sandy soil in frames, which are ordinary or two-light ones, according to the number of cuttings to be inserted. We prefer to stand the frames on a hard bottom, such as a 6-inch thickness of rough ashes, with a surface of finer ones, the rough, such as clinkers, being put at the bottom, and the siftings at the top. The site is somewhat sheltered from winds, otherwise open, and the frames are placed so that they face the north. A compost of good fibrous loam, with a fourth of leaf soil or old manure, and a sixth of sharp sand, the whole well incorporated, is put in to a depth of about 6 inches at the back and 4 inches in front, surfacing with a full half-inch of sand. The compost is put in rather firmly and in a moderately moist con-

dition, a good watering being given before inserting the cuttings, and time allowed for its soaking through.

From the Roses going out of bloom until the early part of September is our time of inserting the cuttings. We, however, prefer the early part of August as suiting all classes of Roses; the danger is having the wood under rather than over-ripe. It is an axiom that when the blooms are cast the wood is sufficiently ripened for insertion as cuttings. Such, however, is not our experience, as the season has something to do with the solidification of the wood, and we have never found soft growths to root satisfactorily, or if they should root make healthy durable plants; in fact, we like the wood hard, but not leafless as it is in autumn. We take the medium strong short-jointed growths of the current year, having all ready for inserting them beforehand, as they suffer by being allowed to lie about. The cuttings are from 6 to 8 inches in length, a little less for the weakly growers, and a little more for the stronger varieties, as the cuttings cannot always be had of a particular length. They are taken off close to where they originate, which means securing firm wood with dormant basal buds, or if this will interfere with the plant by depriving it of the necessary buds for future growth, the cutting is detached so as to leave a couple or so of the basal buds intact on the plant. The base of the cutting is pared or cut smooth transversely immediately below a joint or bud, and the leaves for two-thirds the length of the cutting upward removed, leaving those at the top intact. The shoot will probably have made a second growth from the upper part of the shoot. If those are on the part that must be retained to give the necessary length for the cutting, cut them back carefully to one joint, preserving the leaf. We thus have nothing but firm wood, every bud of which has stored matter in the wood calculated to support it until rootlets are formed.

The cuttings are assorted into sizes; the longest are put at the back of the frames, and the shortest in front. The cuttings are inserted two-thirds their length in the soil with a dibber, in rows 6 inches apart, and 3 inches asunder in the rows. We sometimes run dry crystal sand into holes before closing the soil well about the cuttings, pressing it down with the fingers. There is a decided advantage in using the sand, for when the soil comes in contact with the stem there is occasional spotting, and sometimes complete collapse, through, we presume, the organic substances in the soil undergoing change or evolving matter inimical to the as yet susceptible bark. However that may be, it is important that the soil be made firm about the cuttings. A good watering is given after inserting the cuttings; not a soaking to make the soil sodden, but a careful watering through a rather fine-rose watering-pot. The lights are put on at once, and kept on from that day forward for the next six weeks. The lights are brushed over outside somewhat lightly with whitening mixed with skim or buttermilk, or "summer cloud;" the object is to get a subdued light without dense gloom. The rains reduce the shading after a time, or, if not in three weeks to a month, we wash some of it off, and clean it off altogether by six weeks from the time of insertion. The lights are lifted every morning to see how matters are going inside, and to allow the pent-up moisture or confined air to escape. The cuttings are cleared of damped, damaged, ripened, or fallen leaves, and if there be any appearance of dryness a light sprinkling over the foliage, given through a fine-rose watering-pot, and the lights are immediately replaced. Extremes either way—i.e., needless sprinklings or withholding moisture altogether, are to be avoided.

In a month a callus will be formed, but to make sure allow six weeks; air should then be admitted so as to gradually inure the cuttings to the external air and a drier régime, as there is now to be a solidification of the growth, to effect which evaporation must take place. The plants must have exposure to light and air, and upon this depends their hardiness. Cuttings that are inserted in September—and we advise it to be done by or before the middle of the month—are treated similarly, but the necessity for shade is not so pronounced, or for sprinkling, and we make a difference in the after treatment, for whereas the early August cuttings are or may be potted up in October or not later than early November, the early September cuttings are allowed to remain twelve months before they are disturbed, and I am persuaded that thus allowing the cuttings to form good roots before being lifted is the proper way to get Roses well established on their own roots. I have tried potting them in early autumn and deferring it until the early autumn of the year following the insertion of the cuttings, and the latter were much stronger and did better afterwards than those potted and coddled through the winter. If potted they are either kept in a house from which frost is excluded or plunged in ashes over the rims if frost has access, with the protection of mats over the lights in severe weather. They can be turned out in spring or grown in pots, assigning them a position on a north border up to September, when they may be placed in a sunny one

in order to harden the wood. Good plants may be had in this way in 6-inch pots fit for forcing the winter following, or in eighteen months after inserting the cuttings. Tea-scented Roses are of course here meant. The Hybrid Perpetuals, instead of being potted, can be planted out where they are to remain in the autumn twelve months after insertion. If the cuttings are left a year the lights are drawn down in spring so as to harden the plants well, and in late April or early May, or even earlier if the frames are wanted, the latter are removed altogether, the sides of the cutting bed being sloped off with fine ashes.

By allowing the young plants to remain twelve months where inserted they get more stamina, form a stronger root stem, and fuller and more ligneous roots, with a stronger growth of head. These may be planted or potted and the roots shortened back, but not the head, letting them remain until late spring before pruning, when they may have pushed fresh growth from the upper part of the shoots, and may be headed down, leaving three or four eyes, from which speedily spring strong shoots, followed very often before the summer is over by very much stronger ones from eyes or buds below ground. When these come we may make sure of bushes in the third year that will give trusses of bloom never seen on Roses or any kind of stock, the bushes as large as any lover of basketfuls of Roses for decorative purposes can desire. If pyramids are wanted let the root growths mount up to a height of 10 feet or more, as they will in a season, and if ripened to the tips they will give a wealth of blooms the following season from base to summit, such as to astonish those who have hitherto only seen Roses on stocks.—UTILITARIAN.

STRAWBERRIES AS ANNUALS.

If my ideas on the subject of treating Strawberries as annuals are not altogether novel they are perfectly original, and, as I hope to prove, more practical than fanciful. Few experienced cultivators now-a-days allow their Strawberry plants to remain on the ground after they have produced three crops of fruit, but the question I wish to ask is whether, in very many instances, it would not be wiser to clear them off one, if not two years earlier than they do. All will agree with me that strong one-year-old plants produce comparatively heavy and early crops of extra fine fruit, and as a rule the young plants are also the most continuous bearing. In the second year they not unfrequently yield heavier crops, and not much fault can be found with the size of the berries, but it is only under favourable circumstances that the three-year-old plantations give such good returns as first appearances would warrant the inexperienced in anticipating. In a dry season the old plants are the first to fail, while should we have a wet summer much fruit rots on the ground around those longest planted, owing to these having by far too much foliage. The fact of its not paying to keep Strawberries more than two or three seasons on the ground does not prove that they would be most profitable treated as annuals, but it is leading up to it.

In the case of plants grown on deeply trenched highly cultivated ground it is only in exceptional cases that it is necessary to depend exclusively upon one-year-old plants, and it may seem incredible to some that such exceptions are to be found. When first taking charge of a garden in Middlesex I was told by an enthusiast in Strawberry culture that it was useless to leave the plants on the ground to produce a second crop, but of this I was not fully convinced till I had experimented with a portion of a large bed. In the end I was obliged to admit that only maiden plants would yield eatable fruit, and by good culture extra fine crops were invariably obtained from these. In this instance it paid well to treat Strawberries as annuals, and in numerous other gardens it would also be found the most profitable plan to adopt a similar method of culture if those in charge could "screw up courage" enough to follow it. Doubtless where much labour and expense in manuring and trenching has been incurred on the preparation of the ground for Strawberries it would seem a most unprofitable proceeding to root them up after one good crop has been taken from them, and if there were no need for it I would not advise that it be done. Where, however, the second or third crops are disappointing, which they often are, what is the use of preserving the plants after the first season's produce has ripened, and sufficient runners have been obtained? An early cleared Strawberry bed is one of the best sites imaginable for Broccoli, the latter being planted without the ground being dug, and this crop alone would pay for any trouble previously taken in preparing the soil. I hold, however, that no more trouble need be taken in planting Strawberries than almost any other crop, and when the plants are put out, say in close succession to early Potatoes planted on ordinarily manured and roughly dug ground, there need be no compunction in cutting them up after they have had a short and merry life.

While they last Strawberries are the most popular fruit in season, and the longer the supply lasts the better owners of gardens are pleased. It behoves gardeners therefore to vary the sites of the beds as much as possible, some plants being grown on sunny borders, the principal portion in a somewhat cooler but not low position, or where frosts are apt to spoil the earliest and best blooms, and the remainder in a cool late quarter. As far as the main portion or principal plantation is concerned it may not in all cases be wise to treat these as annuals, or even to destroy them after the second crop has been taken; but I maintain that nothing but young plants should be tolerated on a warm border, and that only young plants can be depended upon to fruit well in a cool or very late position. All gardeners will agree with me that the sunny wall borders are, as a rule, much too limited in extent, and the more closely they are cropped the greater the certainty that the kitchen will be well supplied with superior vegetables. A portion of a south border might yet well be devoted to Strawberries, even if only one or two hundred plants are there located, and these will be the means of furnishing several extra early dishes of fruit, and also abundance of good early runners; indeed, it is advisable to treat a few plants as annuals, if only for the purpose of obtaining a good supply of strong runners, as it is very certain those produced by worn-out older plants are far too weakly to be profitable.

Nothing can be more simple than this border culture of Strawberries, the one principal condition being that the plants be put out early, or, say, not later than the first week in August. Our plan is to liberally manure and dig the ground during the winter, and plant it with Ashleaf Potatoes in March or early in April. A good crop of these is invariably obtained, and it is cleared off long before the Strawberries are ready to be put out in succession. According as the Potatoes are lifted the ground is cleared of rubbish, forked over, or rather levelled, and all lumps of soil broken down, and this being done the planting can be done at any time, no matter how dry the surface may be. A distance of 18 inches apart each way is sufficient for the strongest growers, the best of these being Sir J. Paxton, but 15 inches is ample for the rest, including the early and very heavy cropping Noble. In our case only these two varieties will be planted on a warm border this summer, and both are profitable. It is not very material whether the runners for planting are first rooted into small pots or into a ridge of soil and moved with a mass adhering to the roots, but it is of the greatest importance that they be in a moist state when planted, and kept so afterwards, care also being taken to well firm the soil round them, as it is not a mass of foliage, but a comparatively heavy and early crop of fruit that is needed. I consider it unwise to mulch the beds till the spring, as a heavy surface dressing of manure keeps the border too cool. If the ground is rather poor an early spring dressing of soot and guano, or some kind of special manure, ought to be given and lightly stirred in, the mulching being applied after the rain has well washed this in. We commenced gathering this season from plants on an early border about June 7th, and at the present time (July 19th) we have several hundred strong runners rooting into large and small pots. When these are well established the ground will be cleared of Strawberries, and early Broccoli at once planted. The latter will give us some serviceable heads, and coming off the ground early it may be got into condition for Potatoes again or any other early crop we may choose to put on it. Those who cannot see their way to devote any portion of an early border to Strawberries may yet try another method of securing an early crop without much trouble, and for which I take some credit for originating. Having found that Tomatoes succeed admirably on a shallow raised border, temporarily formed against the sunny walls of forcing houses, it occurred to me that Strawberries would succeed equally as well under somewhat similar treatment. In this case Strawberries must be grown as annuals, a change of soil as well as plants being absolutely necessary, or failure will result. These raised beds may of any width, or, say, from 2 feet to 4 feet wide, according to the room available, and may be formed on a hard bottom, or this may be loosened prior to disposing about 6 inches of fairly rich loamy soil over it. In this moderately strong runners, which may usually be found fit for lifting among the old rows of the best early and second early varieties, may be firmly planted 12 inches each way, or they may be arranged rather more closely in squares to admit of handlights being placed over them as they are coming into flower. In dry weather they will require any time after they are in flower to be watered frequently, and in any case a mulching of rather short manure will benefit them. The fruit ought to be propped up well clear of the ground and foliage with birch spray, and those who take this small amount of trouble will be rewarded by a capital lot of extra early Strawberries. We tried several varieties last season in these positions, and the second earlies were available in advance of Vicomtesse Hericart de Thury in the open. All the plants grown

in this way will shortly be rooted out, and after a liberal dressing of rich loamy compost has been well mixed with the old soil fresh rooted runners will be planted.—W. IGGULDEN.

DEATH OF THE REV. M. J. BERKELEY.

IT is with unfeigned regret that we announce the death of the REV. M. J. BERKELEY, M.A., F.R.S., F.L.S., Honorary Fellow of Christ's College, Cambridge, and Vicar of Sibbertoft in Northamptonshire. This distinguished man of science, after a long life of unwearying work, breathed his last at Sibbertoft Vicarage on the morning of Tuesday last, the 30th of July, at the age of eighty-six. He had been ill for four months previous to his death, and though during the last four or five days he suffered much he was conscious to the last.

Mr. Berkeley was born at Biggin House, near Oundle, on the 1st of April, 1803, and was educated first at Oundle Grammar School, and thereafter at Rugby. He entered Christ's College, Cambridge, of which he was a scholar, in 1821, and graduated in 1825 as fifth Senior Optime. Although there was no branch of vegetable physiology and pathology that escaped the searching investigation of Mr. Berkeley, it was to the study of fungology and cryptogamic botany generally that his studies were chiefly devoted. His earliest work, we believe, was "Gleanings of the British Algae," written about 1830, when he was curate of Margate, and it was about this time that he made his great discovery in the way of identifying the Vine mildew and its cure. The gardener of his friend Mr. J. Slater of Margate having observed a peculiar affection of the leaves and fruit of his Vines, consulted Mr. Berkeley on the subject, who at once saw that it was a form of mildew new to this country. His remedy was an application of flowers of sulphur, which proved efficacious in destroying the pest; and the intelligent gardener, who wrote an account of the disease and its cure in the *Kentish Gazette*, had his name immortalised by Mr. Berkeley recording the mildew as *Oidium Tuckeri*. The disease spread not only in this country but on the Continent, and the vineyards were threatened with extinction, but for the simple application of the flowers of sulphur. On one occasion an extensive vineyard proprietor of the south, when on a visit to this country, requested to be introduced to Mr. Berkeley, that he might in person thank him for the great benefits he had done to France by his discovery.

In 1833 Mr. Berkeley became vicar of Apethorpe and Woodnewton, near Kingscliffe; and at Kingscliffe he resided till his presentation to the living of Sibbertoft in 1868. In 1836 he was elected a Fellow of the Linnean Society, and in 1857 he produced his valuable textbook, the "Introduction to Cryptogamic Botany," and in 1860 his "Outlines of British Fungology." In 1879 Mr. Berkeley was elected a Fellow of the Royal Society, and for his scientific researches he was awarded the Royal gold medal of the Society. Even as late as 1886 he wrote a paper on Zanzibar fungi.

As a horticulturist Mr. Berkeley was not less distinguished than he was in the higher walks of science. His gardens, both at Kingscliffe and Sibbertoft, were his never-failing delight. For many years he held the office of Botanical Director of the Royal Horticultural Society, and was also editor of its journal; and as the highest honour they can bestow the Council elected him an honorary member.

And now this great intellect, which was ever at work, is at rest; and not only in this country, but throughout the whole scientific world, will the event be regretted, for Mr. Berkeley was one of those who endeared himself to all who knew him, and who was ever ready to perform an act of friendship whenever he had the opportunity.

This brief sketch, written hurriedly on receiving the sad news of Mr. Berkeley's death, as we were going to press, is necessarily very fragmentary and incomplete.



ORCHIDS AT BRISTOL.

THOUGH neither extreme rarity or extravagant costliness characterises as yet the increasing collection of Mr. James Crispin, a well known Bristol amateur gardener and enthusiastic lover of Orchids, yet to a true horticulturist this fact does materially lessen the pleasure of inspecting any collection of plants if clean, healthy, and of vigorous growth, which, like those under notice, give evidence of the care and attention bestowed upon them. Though with only a few years' experience in the art of Orchid growing, Mr. Crispin appears to have mastered the secret of success in their culture. Beginning with a few of the commonest varieties, and noting their peculiarities and liking for certain treatment, he has progressed rapidly, and up to the present time cool, intermediate, and East Indian houses have been found necessary to accommodate exclusively the various new purchases. These houses have been constructed

to meet the requirements of the occupants in a way that is worthy of imitation by amateurs who wish to succeed in the cultivation of these interesting plants. In the cool house, which is below the ground level, hot-water pipes of small diameter are attached to the roof, by which means, together with its sunken position, ensures an even temperature both summer and winter. In the East Indian house a portion of the pipes are laid in open brickwork water-tanks, and being fitted with necessary valves to each section, and the use of an hygrometer in each house, the humid or arid state of the atmosphere is completely under control. Here also small pipes are suspended from the roof, which effectually obviates any danger from drip that oftentimes proves so destructive to the young growths; but with Mr. Crispin this is practically unknown, as latterly neither syringe nor watering-pot has found favour with him, sufficient moisture being quickly raised when necessary by evaporation, and all watering is done more effectually by plunging the plants in a tank of tepid water as often as necessary. A few plants were flowering freely at the time of my visit, among which were *Cattleya crispera*, a grand mass of growth and flower sheaths; *Cattleya Gaskelliana*, a well flowered plant; *Lælia xanthina* and *Oncidium splendidum* were worthy of note, the latter for its large mass of healthy roots, as well as for several strong spikes of bloom; *Oncidium leucochilum*, *Aerides Larpentæ*, *A. affinis*, and *Thunia Marshalli*, all well flowered and in good condition; *Cattleya gigas* bore recent traces of floriferousness and vigour by the production of seed pods; *Dendrobiums* of various species were throwing up willow-like shoots that with duly ripening should give good returns next spring. In the cool house some good types of *Odontoglossum Alexandræ* and *O. Sanderianum* were in flower with *Masdevallia Harryana*, *Anguloa uniflora*, and several others, all presenting a fine healthy appearance, showing clearly what may be accomplished by an amateur when energy and enthusiasm are not wanting.—M. C.

MASDEVALLIAS.

The disease known as "the spot" that attacks the foliage of these plants is unquestionably due to too moist and too low a temperature. Since the plants have been grown in the warmest part of the *Odontoglossum* house instead of the coolest, and the winter temperature of that structure increased, all the foliage that has been made is perfectly free from spot. During the summer months these plants are at home in any part of the cool house, but during the winter they should not have a lower night temperature than 50°. *M. towarensis*, even in this temperature, will fail to flourish; it is never removed from the warmest end, and is wintered at the coolest end of the *Cattleya* house.

ODONTOGLOSSUM VEXILLARIUM.

This enjoys a little more warmth than the cool house proper from October until May. During the summer months it is a mistake to grow it too warm and too close. The foliage draws up weakly, and soon becomes a prey to yellow thrips. During the summer it does well at the warmest end of the cool house, where it makes stiff, sturdy growth, and flowers profusely. It flowers too freely, and if three large spikes are allowed to remain on each growth until they fade the plant suffers considerably. If plants are infested with thrips the best means of eradicating it is to sponge the leaves with tobacco water and dust tobacco powder into the axils of the leaves. The latter must be well washed out again two or three days after.

DENDROBIUM NOBILE.

Plants that have been forced into growth for a few seasons, to flower during November, have finished the lengthening out of their growths. These need attention. If retained in a warm moist house they will quickly start again into growth. Remove the plants to a cooler structure, and admit air and more light to them. They must be exposed gradually to the light to harden and ripen their pseudo-bulbs. They must not be exposed suddenly to the sun, or premature ripening will commence. When once the pseudo-bulbs assume a hard yellow appearance they will bear without injury full sunshine in a cool house.—ORCHID GROWER.

CATTLEYA FORBESII.

SOME time ago (May 23rd, page 422) "N. G." asked for information respecting the flowering of the above named *Cattleya*; therefore if the following remarks upon its treatment, which in my case have proved successful, are any help to him I shall be pleased. In the first place I find the plant requires a very decided course of treatment, because it is a free grower, and if not guarded against it is very liable to do the same as *Dendrobium Wardianum*—that is, start into growth before it has done flowering. I am of opinion this habit, if encouraged, very much weakens the plant and

is likely to be one cause, if not the principal one, of the flower sheath proving barren. I also think "N. G." does not allow his plant sufficient root space. A 5-inch pan is too small for the size plant he describes, as the shortness of the pseudo-bulbs, 5 to 7 inches, seem to indicate, when they ought to be double that length. I have several plants of this *Cattleya* on blocks and in pots, and have always had them flower as well as any others of this section.

I have generally treated the plants the same as other *Cattleyas* up to the time the flower buds begin to open, when they are taken to a cooler house till the flowering is over; afterwards they are set on one side and kept rather dry, but not so as to cause them to suffer, and have a good rest; this resting I consider an important factor in the successful culture of this plant, for it is not difficult to grow and keep in good health. When the plants are started into growth a surfacing of fresh peat and sphagnum laid up close to the base of the pseudo-bulbs will assist them much, as the young rootlets take quickly to it, and it would be wrong to allow them to get thoroughly dry while growing.—THOMAS RECORD.

CANKER IN FRUIT TREES.

TIRED as I am of writing on this subject, I cannot leave the discussion as it stands on page 38. To leave it thus would not be fair to my arguments or the subject itself. Personally I do not care the toss of a button whether "W." demolishes my theory to his own satisfaction, whatever lookers-on may say. My Goliath with the pen refers to my "capitulation" as regards insects attacking only such sorts as they like best. Writing from memory, this idea occurred at the outset some five or six years ago, and it was in reply to a question put at a meeting of the Amateur Gardeners' Society. As it has always been imagined that certain sorts of Apples—Ribston Pippin, Dumelow's Seedling, and Hawthornden for instance—are more subject to canker than others, I have purposely experimented upon them. I think any unprejudiced readers will agree that if I can keep these sorts free from canker on my insect theory, as I have before stated, while other trees of the same varieties not operated upon and growing near continue to canker, whether the winters are "comparatively mild" or not, the insect theory is not quite "demolished."

If my trees should have to succumb to frost-bite when the thermometer goes down to zero, as I have known it here, well and good, I will willingly "capitulate," but when I remember the beautiful healthy appearance of the Canadian trees after 30° below zero I have faith that the trees referred to will stand even zero without chilblains. I remember how every particle of the trees above ground (I must be careful) was enveloped in a sheet of ice for over a week last winter, although the thermometer did not go very low, perhaps not low enough to produce canker in all alike.

"W." refers to the insects he has seen both on the Impney specimens and on mine. Now of course I cannot say which species of insect he referred to, because there are at least half a dozen that I am well aware are found in cankered places and decaying wood. A very interesting item respecting the different insects found has just come under my observation. When cutting some specimens for examination I noticed a large red spider start from a place which was fast recovering from a canker wound (No. 1 case enclosed, which is carefully sealed up). On removing a bit of the dead bark with my thumb nail two or three insects of a grey colour were disturbed, which are usually found on dead wood. One of these the spider immediately seized and demolished. Although shaken off it was not going to be deprived of its dinner. It carried its prey like a cat would a rat, and you can see the specimen. Above that wound on the same branch the wood is killed with canker. Specimen No. 2. Close examination will reveal the tiny insects I have so often referred to. Whether these are what "W." refers to or not, these I am convinced are the originators of canker, and let the specimens come from where they may, England, Ireland, or the Channel Islands, I have never failed to find them. Specimen No. 3, which is killed with canker at a certain point where the insects and larvæ are in abundance under the dead bark. These for some unaccountable reason we are asked to believe are the results and not the cause of canker. If I carefully get rid of these, and the trees become healthy and free from canker, I must not believe they were the cause, but that frost or half a dozen other reasons were at the bottom of the mischief. I have not the slightest objection to sending carefully selected specimens containing these insects to the Scientific Committee of the Royal Horticultural Society, but considering that I have before seen what a scientific gentleman has had to say upon the subject I should expect a repetition of the reason given of canker. If I did not cure the Hawthornden tree before referred to I have cured another of the same variety on precisely the same kind of stock by "painting alone," and some of the fruit from the same tree was sent to the *Journal of Horticulture* some three years ago, with a specimen of Jargonelle Pear on a branch nearly cankered through, and after dressing it bore well, although there was not above an eighth of an inch of bark to supply the sap.

"W." makes me to say that, with reference to Dr. Hogg's tree not affected, it should be according to my insect theory. This I do not admit. These insects do not fly, and if they are well satisfied on the other trees there is no need for travelling.—J. HAM.

[The specimens sent have been subjected to microscopic examina-

tion, and it was apparent the insects had escaped in transit. We endeavoured long and anxiously to find the alleged canker-causing culprit, but failed.]

LONICERA SEMPERVIRENS.

FOR training up the rafters of a cool greenhouse few plants are better suited than this lovely North American Honeysuckle (*Lonicera sempervirens*), fig. 10; its trailing habit is admirably suited for this purpose. The terminal clusters of trumpet-shaped flowers, which are produced during spring and early summer, hang down in great profusion, are very showy, being a brilliant orange-scarlet with yellow inside the



FIG. 10.—LONICERA SEMPERVIRENS.

flowers, and contrast well with the green glaucous leaves. If planted out of doors in a sunny situation it flowers freely during summer, but, unlike most of our hardy Honeysuckles, it has no scent. There is another variety of this delightful species called *L. sempervirens minor*, also useful for a similar purpose.—G.

FRUIT AND VEGETABLE CROPS IN HAMPSHIRE.

ALTHOUGH Apples and Pears flowered abundantly with few exceptions but little fruit can be recorded. Worcester Pearmain never before failed to produce a good crop of fruit, but this season it is nearly fruitless. There are a few varieties of Apples which carry nearly a full crop, but some regarded as "certain bearers," have not a quarter of a crop, while others, notably of Keswick Codlin, Alfriston, Dumelow's Seedling, and Mère de Ménage, have no fruit. Those which have a thin sprinkling are Lord Suffield, New Hawthornden, Devonshire Quarrenden, Cox's Orange

Pippin, and King of Pippins. The few which have a full crop are Warner's King, Yorkshire Greening, Ribston Pippin, and Irish Peach; the latter, owing to its earliness, escaped the attacks of caterpillars. The ravages of this pest is the main cause of the loss of the Apple crop.

Pears are even worse than Apples in respect to fruit. All varieties as pyramids, including even Louise Bonne de Jersey, are a failure, while of wall trees only such as Beurré Diel and Pitmaston Duchess carry anything like a crop. The trees look very healthy, the foliage being good and clean. Damsons bloomed most profusely, but the trees were early attacked with green fly; the result is only a thin crop of fruit. Cherries on walls, such as May Duke, White Heart, Governor Wood, Bigarreaux, and Morellos have a good crop, while the trees look healthy, except Morellos, which in some instances have lost the points of the young shoots, these having died off quite suddenly. Plums on walls flowered abundantly, but have only a moderate crop of fruit, as green fly seized the trees early. Some few varieties are good, such as Orleans and Cox's Golden Drop, while Green Gage, Washington and Jefferson, have a medium crop. Victoria is this season devoid of fruit; plenty set, but failed to swell.

Bush fruits promise an unusually heavy crop. Gooseberries are more abundant than usual; and the crops are always heavy here. Black, Red, and White Currants have a heavy crop, but many berries of the former and latter kinds have fallen from the points of the bunches, while the red ones are quite perfect. Strawberries have been very abundant.

Potatoes look remarkably well in this neighbourhood, and so do the majority of vegetable crops with the exception of Carrots and spring-sown Onions. The former are nearly a failure owing to the ravages of slugs, which played sad havoc with many crops. The usual remedy of dusting the plants was utterly useless, in fact they seemed to thrive and grow fat upon soot; lime used in a quick state is by far the more efficacious. Carrots have been sown two and three times in some parts, and still there remains but half a crop. Onions did not come up so well as in years past, and full crops could only be had in some gardens by transplanting.

I never saw trees, both deciduous and evergreen, grown at such a pace nor in such luxuriance as they have done this year; especially is this noticeable in Conifers. Limes, like fruit trees, have been devoured by caterpillars.—E. MOLYNEUX.

INSECTS OF THE FLOWER GARDEN.

(Continued from page 405, last vol.)

BEFORE describing some other insects of the Lepidopterous order which, in their caterpillar state, are more or less hurtful to the plants that adorn our borders and beds, I must refer to the benefits derived from certain butterflies and moths which help on the fertilisation of flowers in their researches after honey. The insects give assistance not only in those cases where the stamens and pistils are in separate flowers, but also in many other cases where, although these are located together, there are obstacles which interfere with self-fertilisation. It is, of course, unavoidable that the insects by their visits and journeys from flower to flower should produce changes similar to those the gardener makes by design; and in their transference of pollen these creatures sometimes alter the character of a favourite flower, and we get a new strain which is not regarded as an improvement. This is unavoidable, but, on the other hand, some capital varieties are due to crossing effected by insects. Brightly coloured and showy flowers are, as a rule, visited by butterflies and day-flying moths rather than those that are small or inconspicuous.

Now, in the order of the Cruciferae or Crossworts, which contains many familiar garden species, as for example the Arabis and the Wallflower, though the species are much frequented by the above and by other insects, their part in fertilisation is not important owing to the structure of the flowers. But it is different when we take some species of the Caryophyllaceous tribe, such as the extensive group of Pinks. Here we have a flower with a long tube, and it is impossible for a bee or fly to reach the honey; but a butterfly can, as its proboscis is adapted to a tube of the kind, and when it is withdrawn a portion of the pollen is generally carried away by the insect, to be rubbed off usually on the next flower visited, for it has been noticed that most insects visit when they can a succession of flowers of the same species. A flower with a long or curved corolla is likely therefore, if fertilised by insect aid, to be indebted to a moth or butterfly, but their diligence in this work is evidently less marked than that of the bees and their allies.

There is a group of moths containing numerous species—a few large, but the majority of moderate size—in which are some of frequent occurrence in flower gardens. We style them the Geometers—i.e., “ground measurers,” from a peculiarity of their caterpillars, which are also called loopers, because in the act of walking they loop the middle of the body, having legs only at the head and the tail, and, as a matter of course, they appear to measure the ground, or a branch upon which they may be walking, doing it in strides, few or many as may happen. Another odd circumstance with some of them

is that they raise the upper part of the body in the air at various angles when they are reposing, and then appear like little bits of twig. Undoubtedly one result of this mimicry is that they frequently escape being eaten by birds, but it does not save them from their parasitic insect enemies, which are guided to their prey by some keen sense, smell or touch, rather than sight probably. Just about this time there may be seen in gardens, flying languidly at eventide, and conspicuous from its pale hue, the moth called the Swallow-tail (*Uropteryx sambucata*), which by its English name indicates the peculiar formation of the wings. The Latin name is not so appropriate, for though the caterpillar does occur upon the Elder, this is not its only or its chief food. I have taken it upon fruit trees now and then. The Honeysuckle is one of its favourite plants, and a variety of herbaceous species. Newman remarks that he found it very partial to garden Forget-me-nots. This is a somewhat large caterpillar, yellowish brown or darker, with pale stripes, and seven humps. It begins to feed in the autumn, then lays up for the winter, and completes its growth in spring or early summer. Its cocoon is curious, being rather in the form of a hammock, which is slung from a twig by silken cords; its texture is slight, but bits of leaves are interwoven.

There is a moth not uncommon in April and May, seldom seen in flight, but which rests on palings during the day, its wings streaked and lined with grey, brown, and black often resembling in colour the weather-stained or moss-grown wood to which it clings. This we designate the waved umber (*Hemerophila abruptaria*). It is not abundant enough to cause serious mischief as a caterpillar, but in that stage it feeds upon the Lilac, and the Rose generally in July. This is a slim brown caterpillar bearing behind its head a white ring like a collar, and when full grown it spins a cocoon at the foot of some twig. Chiefly in the south of England we find feeding on varieties of the Clematis the greenish-white caterpillar of the small emerald moth (*Jodis vernaria*). This lovely insect cannot, however, be kept in collections without its fading by degrees. The moth emerges about July, and the caterpillar feeds in autumn. Next we pass to some moths much smaller, but also geometers, belonging to the group of the pugs, insects difficult to name, as allied species are wonderfully alike in many cases. They are commonly to be seen about gardens through the summer sitting on some object with the four wings expanded and flattened. Nearly all the caterpillars, which are small, like the moths, live concealed in the flowers of herbaceous plants, and as a result these are more or less disfigured, while the development of fruits and seeds is prevented. Happily, few of the Eupitheciae or pugs are numerous enough to interfere seriously with the floral display in our gardens, as there seems to be no remedy except that of removing all buds or flowers seen to be infested. A few of them make cocoons in the seed pods, but most of them descend to the soil and make a little cell of silk mixed with fragments of earth.

The caterpillar of the netted pug (*E. venosata*) feeds in July upon the capsules of the species of *Lychnis*; it is greyish, has a black head, and is spotted with white. One of the commonest of the pugs occurs from May to August, both as caterpillar and moth. It is somewhat absurdly called the lime speck, for it has nothing to do with the Lime tree; the Latin name (*E. centaureata*) brings us nearer to the truth, for if it does not feed upon the Centaury it infests a variety of plants belonging to Composite tribe, such as the garden Scabious and the Golden Rod; it is also occasionally found on Campanulas. This caterpillar is slender, usually yellowish or pale green, with darker spots, which are sometimes wanting; specimens also occur which are pinkish white and spotted with red. A pug named after the illustrious naturalist, Haworth, is very fond of the buds of the Clematis, going from bud to bud, and doing conspicuous damage, as the caterpillar consumes a number of these in July and August, each turning black when it is quitted by the insect. There is little chance of catching the moth, for it flies very rapidly and always in broad daylight. Very abundant some years is the pug called *E. Absynthiata*, but it by no means confines itself to Wormwood, for the caterpillar feeds upon a great variety of plants, though it may show a preference for those of the Umbelliferous order. It attacks the flowers and also the fruit, feeding from August to the end of October, and specimens, even of the same brood, are of all shades of colour, but invariably studded with short white hairs.

Amongst the moths known as the “carpets” are several species that haunt the flower garden; one of these, which is occasional only, is the silver ground carpet (*Melanippe montanata*) a pretty insect of creamy white, marked with grey and brown. Towards the end of the summer it deposits eggs upon the leaves of the Primrose, probably, also, when it has opportunity on allied plants in our gardens. The caterpillars live from autumn to spring. These are brown, and have curious stripes and markings of deeper brown,

— **GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—Mr. E. R. Cutler writes:—"As you are well aware, the Committee of this Institution desired to commemorate the Jubilee year of this Institution by placing on the pension list all the unsuccessful candidates at the late election, and so clearing up the list. I have the pleasure to inform you that at a meeting of the Committee held yesterday it was decided to carry out the scheme, and they have placed the whole lot, seventeen in number, on the pension list from the 24th June last. It may perhaps interest you to know that the pensions are paid every quarter, and the first payment will be made on or about the 1st of October. I enclose a list of the persons placed on the list, and please note the great ages of many of the pensioners, and that they reside all over the country, only three in London:—James Brown, Croydon, aged 71; Edward Spivey, Sawbridgeworth, 76; George Lambert, Chichester, 71; Stephen Evans, Chichester, 74; Thomas Morley, Cambridge, 80; Joseph Norval, Chester, 63; Elizabeth Snow, Taunton, 74; James Manderson, Stoke Newington, 66; Elizabeth Pollard, Croydon, 76; Henry Berry, Dromore, Ireland, 73; James Edmunds, Fulham, 83; William Fowle, Southampton, 69; George Fricker, Bourne Valley, 73; John Grimshaw, Huyton, Liverpool, 80; John Hooper, Bristol, 80; Clement Preston, Brixton, 77; James Priest, Long Eaton, Notts, 65.

— **BUNYARD'S PRIZETAKER LONGPOD BEAN.**—Some pods of this variety have arrived from Maidstone. We have seen longer, but never better filled pods than these, which contain eight beans each. They are perhaps the heaviest pods we have had sent this season, and that is a good test of productiveness.

— **LAXTON'S JUBILEE STRAWBERRY.**—We find this variety to be the heaviest cropper of any we have (fifty varieties), and when fully ripe it is of delicious flavour. Its great merit is that it lasts such a long time, and perfects all its fruit. Where large berries are required it will be necessary to thin severely.—GEO. BUNYARD & Co.

— A CORRESPONDENT sends the following:—"In the saloon of the Royal train which conveyed the Queen to London on Friday, from Portsmouth Harbour, for the purpose of attending the marriage of the Princess Louise of Wales, had been placed a tastefully arranged BASKET OF FLOWERS, comprising Orchids, Roses, Carnations, white Passion Flowers. Her Majesty so greatly admired the basket that by her express instructions it was removed to Buckingham Palace. Mr. H. Appleby, of the Boxhill Nurseries, Dorking, supplied the flowers, the arrangement being left to Mrs. Appleby."

— **ALOCASIA MACRORHIZA VARIEGATA.**—For decoration during the summer months in either a large or small state this Alocasia is much admired. That there are good and bad types of it there can be no doubt. It is from those in which the markings are clearly defined that the offsets should be secured. If these are slipped off with a small portion of root attached, and placed in 2½-inch pots, using mainly peat and sand with some decayed leaves, they will quickly grow into vigorous plants, especially if they can have the benefit of a close case in the propagating house for a week or two. Afterwards a position close to the glass in the stove is suitable. They should be shaded from bright sun in the middle of the day. Plants in 4 and 5-inch pots are useful for decoration in a variety of ways.—A.

— **LYCHNIS VIScaria FL. PL.**—On the rockery and in the herbaceous borders this Lychnis is one of the most showy of plants, the colour being a bright magenta. It is of dwarf growth, and the flower spikes do not require any support. When used for the rock garden this Lychnis should be planted in a mass, and not dotted singly here and there. The foliage is narrow, forming compact tufts, which is all in its favour as a rockery plant. Where the stock is limited the best method of increasing it is to take up a few old roots at the end of September, pulling them into pieces, no matter how small, if a piece of root can be secured to each, inserting them in sandy soil in a cold frame, shading from bright sun for a few days, and excluding air for a short time until new roots have formed, when abundance of it should be given. If the plants are allowed to remain in the frames until the following April they will be good to transfer where required, and will flower freely in June.—H.

— **PERENNIAL MIGNONETTE.**—There is growing on an old stone wall near us a root of Mignonette, about 10 feet from the ground, with between sixty and seventy spikes of bloom upon it. It has stood there in a south-westerly aspect for the last two winters, and notwithstanding

the severe frosts we have experienced the blooms are as fresh and as sweet as ever. Is not this unusual considering all the others on the ground were killed in the autumn?—H. H. [It is unusual to find Mignonette thus established and flowering so freely now after having remained for two winters in the wall, but it would be still more unusual if the plants in the ground continued in the same way. We had a plant for years in an old wall, but it did not flower so early as yours. The Mignonette is naturally a perennial plant, and when grown in a dry place, which induces the formation of woody stems, these remain alive through the winter and put forth fresh growths in spring. Grown in rich soil in the open border the stems are succulent and destroyed by frost. A plant of Mignonette may be kept in a pot for a number of years.]

— **THAMES DITTON HORTICULTURAL SOCIETY'S SHOW.**—This, the second Exhibition, was held on July 24th, and was in every respect a marked advance on that of last year. Groups of plants arranged for effect were quite a feature of the Show, six exhibitors competing in this class. First honours were accorded to Mr. Card, gardener to — Rueker, Esq., for a very tasteful arrangement, a little crowded perhaps. It was very closely followed by Mr. W. Palmer, gardener to W. F. Hume Dick, Esq., for an exceedingly light and pleasing group. Other competitors who showed well in this class being Mr. Simmonds, gardener to G. B. Windeler, Esq.; Mr. Tarr, gardener to Hannibal Speer, Esq., and Mr. Kent, Thames Ditton. Fruit and vegetables were well and extensively shown, the latter from the cottagers making a good and interesting display. Prizes are offered by the Society for the best kept allotments, this doubtless conducing to increased cultivation on the part of the cottagers. The Royal Horticultural Society offered a Banksian medal to the exhibitor gaining the greatest number of prizes, and this was won by Mr. W. Palmer. Messrs. Puttick & Shepherd, successors to T. Jackson & Son, Kingston, arranged a tasteful group of foliage and flowering plants not for competition, and Mr. W. Tayler, Hampton, contributed some good cut Roses.

— A BOX OF VIOLAS, recently received from Messrs. Collins and Gabriel, recalls the great usefulness of the superior forms of these bright and cheerful flowers. Blooms of about twenty varieties were received, with a brief note of each:—Champion, a fine telling white, very large, makes a handsome bed; Ardwell Gem, the best of the light yellows, very free; Forerunner, a capital bedder in all respects; Lord Darnley, rich and telling in colour, an excellent summer bedder; Mrs. Chas. Turner, a most charming early variety, purple violet, fine form; Sir Joseph Terry, blackish maroon, dwarf, free, and quite unique; Dawn of Day, milk white, splashed and barred with violet blue, distinct; Lady Diana, very free flowering and compact, purple crimson; Queen of Violets, dwarf and sturdy, producing abundance of crimson-purple flowers of fine form and substance, distinct, violet shading in centre, a first-class variety; Pilgrimage, excellent bedder, free, and very effective; Bullion, the best golden Viola, very profuse; Elegance, lilac mauve, distinct; Spotted Gem, makes a lovely bed, very free; Crimson Gem, A1 for bedding purposes, dwarf, compact, free, excellent constitution; Archie Grant, rich violet purple, very fine; Jeffreyana, a most compact pure white form, good bedder; Countess of Hopetown, the grandest of all the pure white selfs; Duchess of Albany, an exquisite combination of steel blue and deep violet mauve; Ethel Baxter, a very fine bedder; and True Blue, dwarf, compact, and an abundant bloomer.

— **WOOLLY SCALE ON FRUIT TREES.**—Miss Eleanor A. Ormerod writes:—"I should much like to be allowed to draw the attention of your readers who may be interested in fruit growing to the appearance or spread of a large white woolly Currant scale which is to be found on Black Currant bushes, also on the Red and White kinds, and on the Flowering Currant (*Ribes sanguineum*.) I have also information of its being found on the Mountain Ash—the Rowan tree of North Britain—*Pyrus aucuparia* scientifically. This locality is of very practical interest, for if it should be found to attack other trees of the *Pyrus* kind—namely, Apple and Pear trees, it will be a very serious business. This scale insect is of the same family as the well-known scale insects that infest Apple and Plum bark, and lives in the same way—that is, by drawing away the juices with its sneaker. But it is easily distinguishable, and the attack noticeable some yards off, by the female scale having an egg-bag of white, woolly secretion. It thus appears, when fresh, like a little mass of slightly corrugated white material, about a quarter of an inch across, and partly hidden at one end by the brown coat of the dead female scale. After a time, when the egg-bags are torn and dispersed, the wool coats the twigs, so as much to resemble the

well-known American blight, and by this appearance, or the many white dabs (perhaps as many as sixty on a foot length of twigs), the attack may easily be distinguished. Just now the young scales are coming out in legions from the woolly bags, and give them the appearance of being dusted with cayenne pepper. This insect has been identified by Mr. J. W. Douglas, a leading authority on this family of insects, as *Pulvinaria ribesiae* of Signoret, a kind known in Germany and France, but which had not before been identified as British. It is of so much importance to check an attack of this kind in its first spread that I would strongly advise all who find it in their gardens to cut down and burn the Currant bushes where they stand, to avoid the risk of the enormous quantity of young insects spreading to other bushes. A limewash, of which I expect shortly to be favoured with recipe in full, has been found serviceable for extirpating the pest in autumn; but its destruction at once would be eminently desirable. Any information regarding this insect would be gratefully received."

— At the last meeting of the ROYAL METEOROLOGICAL SOCIETY for the present session Mr. W. Marriott gave a very graphic and interesting account of the recent thunderstorms which have prevailed over this country. On Sunday, June 2nd, a thunderstorm passed across the country in a northerly direction from Wiltshire about 3 A.M., and reaching Edinburgh by 10.44. It travelled at the rate of about fifty miles an hour. It is possible that this storm travelled still further north, and reached Kirkwall at 3.37 P.M. A severe thunderstorm prevailed over the neighbourhood of the Tweed between 11 A.M. and noon, and was accompanied by hail of very large size, some of the stones being 5 inches in circumference. A very destructive storm occurred over the whole of the north-west of England and south of Scotland during the afternoon; much damage was caused by lightning, and very large hail fell over an extensive area. Some of the hailstones measured 7 inches in circumference, and weighed 7 ozs. During the night of the same day a severe thunderstorm prevailed over Norfolk, which was also accompanied by very large hailstones, some of which were 5 to 6 inches in circumference. On Thursday the 6th thunderstorms prevailed during the afternoon over the whole of the south-east of England; that which prevailed over the Metropolis about nine o'clock was remarkable for the brilliant and continuous display of lightning. During the same night and in the early morning of the following day a very destructive storm prevailed over the eastern counties, much damage being done by the lightning in the north-west of Norfolk. Severe hailstorms occurred between 2 and 3 A.M. both at Margate and Ipswich. During the afternoon of the 7th destructive thunderstorms prevailed over the whole of the southern counties, much damage being done by lightning; while at Tunbridge Wells there was a most remarkable hailstorm; one of the hailstones which was weighed was actually half a pound in weight. An interesting collection of over forty photographs of lightning taken during the storm on June 6th was also exhibited to the meeting. In addition to the sinuous, ribbon, and meandering flashes of lightning, several photographs showed knotted, multiple, and dark flashes. The following papers were also read:—"The Climate of British North Borneo," by Mr. R. H. Scott, M.A., F.R.S.; "On the Variation of the Temperature of the Air in England during the period 1849 to 1888," by Mr. W. Ellis, F.R.A.S., F.R.Met.Soc.; "Atlantic Weather and Rapid Steamship Navigation," by Mr. C. Harding, F.R.Met.Soc.; "Meteorological Phenomena Observed during 1875-87 in the neighbourhood of Chelmsford," by Mr. Henry Corder; "Rainfall in China, and Meteorological Observations made at Ichang and South Cape in 1858," by Dr. W. Doberck, F.R.Met. Soc.

LILIUM BOLANDERI.

A SMALL flowered but very distinct Lily bearing the above name was shown a short time since by Mr. T. S. Ware, of Tottenham, at a meeting of the Royal Horticultural Society's Floral Committee, when it attracted some attention, as few had seen it before. We understand it is one of Mr. Ware's recent acquisitions, and is rather scarce, as it is not included in the collection at Kew. At first sight the flowers would hardly be taken to be those of a *Lilium*, and they are perhaps more suggestive of some of the *Fritillarias*. According to the description by Sereno Watson in the proceedings of the American Academy of Arts and Sciences, the plant in a wild state has stems 1 to 3 feet high, each having one or two flowers, the leaves verticillate and slightly glaucous, and is related to both *Lilium parvum* and *L. maritimum*. The flowers have a nodding tendency, and are of a dull purplish hue or brownish red, becoming paler, and having numerous dark spots on the segments, the colouring and markings imparting a peculiar rather

than a beautiful appearance. It is said to have been found on the Red Hills, Humboldt County, California, and in Humboldt Bay. It may prove to be hardy, and such is said to be the case, but it will require a little further testing, though it is remarkable that many Lilies reputedly delicate have been found quite hardy where they were least expected to be so. There is a strong probability that more *Liliums* are killed by superfluous solicitude for their welfare than by climatal defects. The greatest evil these plants have to contend with is a water-logged soil, and unless some means are adopted to alter such a condition it is use'ess expecting to do much good in Lily culture out of doors. Provided suitable drainage is ensured there are not so many difficulties



FIG. 11.—LILIUM BOLANDERI.

in having a fairly large and representative collection in a satisfactory or even in a flourishing state, and this has been found in more than one garden.—C.

ROYAL HORTICULTURAL SOCIETY.

JULY 23RD.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters in the chair, Messrs. MacLachlan, Morris, Michael, Oliver, Veitch, Wilson, Professor Ward, Dr. Müller, and Rev. G. Henslow (Hon. Sec.).

Pinus austriaca Injured.—Dr. Masters brought boughs of this tree with the young shoots dead, sent by Dr. Hogg. The tree, he reports, was planted eighteen years ago, but for the last two years has been attacked by some malady, the affection proceeding rapidly downwards. The soil on which it grew was a strong sandy clay, but well drained. No insect could be detected upon the boughs by Mr. MacLachlan. Mr. Veitch suggested the cold wet season, and probably an injurious sub-soil, as being the causes. Prof. Ward remarked that a sudden thaw chilling the roots would produce such an effect as the tree in question showed, or an east wind catching the side of a plantation would be a sufficient cause. The fungus, *Hysterium Pini*, which produces black spots, gives rise to a similar appearance, but the specimen showed scarcely any suspicion of this disease. Prof. Ward observed that the effect of frost in April is often recognised by the bases of the leaf-shoots remaining green, in consequence of the protection afforded them by the sheathing scales.

Abies Nordmanniana.—Dr. Scott reported as follows upon the specimens exhibited at the last meeting. "It appears that the burr-like mass of branches with paler yellowish-green foliage was due to the

presence of *Æcidium elatinum*. The mycelium of this fungus was abundant in the stunted leaves and in the abnormal portions of the stem, the development of the leaves being much affected. The diseased leaves show no differentiation of palisade and spongy parenchyma; few chlorophyll granules are developed, and there is a marked deficiency of starch. This last-mentioned fact is, no doubt, a cause of the imperfect development of the wood in the infected branches." Prof. Ward, who had also examined it, added that he discovered a few spermogonia, but no "æcidium" sporanges. It is the same uredinous fungus which causes the "Witches' brooms," and is mostly, if not invariably, confined to *Abies*, for Dr. Masters remarked that he had met with it, if it be the same species, in *Pinus austriaca* and *P. sylvestris*. Dr. Ward added that the fungus has a very remarkable stimulating effect on the cambium, and alters the botanical characters of the part affected, rendering the leaves annual.

Fern-prothallus with Water Pores (?).—With reference to the accumulation of water upon the prothalli mentioned at a previous meeting Professor Ward thought it was quite conceivable that water might accumulate in the tracheids beneath the sorus; but on the other hand it might have been merely dew drops, the evidence being insufficient to furnish a more definite conclusion.

Ivy-leaved Pelargonium Diseased.—Mr. Morris showed leaves of plants received from M. Lemoine and grown at Chiswick badly diseased with a new species of *Gloeosporium*. There was no remedy known, and complete destruction by burning was the only thing to be done.

Effects of Hail at Kew.—He also showed leaves of bedding-out plants, and mentioned a long list of others injured in various degrees by the hailstones, which had riddled and lacerated them on July 15th. Aquatic plants suffered in the same way. Some of the genera most severely injured were *Funkia*, *Nicotiana*, *Polygonum*, Gourds, *Podophyllum*, *Malvaceæ*, *Saxifraga peltata*, *Rheum*, *Boraginæ*, *Solanaceæ* generally, and *Gunnera scabra*. Fortunately there was no damage to the glass houses.

Peas Diseased.—Mr. N. H. Pownall, Lenten Hall Gardens, Nottingham, forwarded specimens of Peas badly attacked by fungi. He reports that for years there have been patches of it, but this season it is very bad indeed. It was referred to Mr. Oliver for examination and report.

Plum Leaves Blighted.—Mr. J. Lloyd-Bozwan of Worcester had forwarded specimens to Kew, which Mr. Morris exhibited to the meeting. The blight had not been previously observed at Worcester. After the attack the leaves shrink up, wither and die, as if burnt, and the ends of the spring shoots, some 7 or 8 inches in length, die also. The leaves are mostly marked with discoloured patches of a faint dusky red colour. Dr. Masters said that he had received similar specimens from various districts. No fungus could be detected by Dr. Cooke, and no insect appeared to be the cause; but Mr. Veitch and other members of the Committee had little doubt but that the affection was due to the wood having been badly ripened in the previous year.

The Red Rose of Lancaster (?).—Mr. W. G. Barron had sent specimens to Kew, which Mr. Morris exhibited, and were supposed to be this variety. It appeared, however, that in the opinion of experts it was a Damask Rose, and not the true Rose of Lancaster, which produces red and white blossoms on the same stem.

Tarsonymus on Abies Nordmanniana.—Mr. Michael had examined the branch above referred to for the presence of any insects, and although having nothing to do with the cause of the alteration of structure, he found the above mentioned insect, but no phytogn. It is a leaf miner, and sometimes very destructive to trees at Turin. He also found eggs at the points of the shoots, which appeared to be those of some aphid.

Blackberry and Raspberry Cross (?).—Mr. Henslow exhibited fruiting branches of a plant originally received from Mr. Viccars Collyer, which he reported had come up quite accidentally in his garden. Mr. Henslow had cultivated it for two years. It flowered last year, the blossoms closely resembling those of a Raspberry, but it bore no fruit. In the present season it has an abundance of fruit densely clustered, quite black, each "drupel" having a tomentose base, and provided with an embryo. It agrees in appearance with the Blackberry, but has ripened at the period of the Raspberry. The stem and foliage is tomentose, agreeing with the Raspberry, but the method of formation of the quinate leaves, as described by Mr. Henslow last year, is that of the Blackberry. The taste was thought by members of the Committee to be indicative of both species. Having been referred to Kew since the meeting, the plant has been recognised as *R. occidentalis*, L., "the Black Raspberry" or "Thimbleberry" of the North U.S. Prof. Gray (Man. of Bot., p. 121), says that curious forms are known with fruit intermediate between this and *R. strigosus*, Michx., a species which "too closely resembles the European Raspberry." Hence it may be a hybrid between this last mentioned species and *R. villosus*, Ait., the "common" or "High Blackberry" of U.S.

Vegetable Marrow Malformed.—Mr. Henslow exhibited a specimen to which a branch had become adherent about half the length of the fruit. It had been cut off three or four weeks ago, and the branch had grown about 12 or 14 inches, and was producing flower buds, at the expense of the tissues of the Marrow itself. It was accepted for the museum at Kew.

Mint with Spiral Torsion.—Prof. Ward exhibited a specimen of this well-known occurrence in plants, with opposite and decussate leaves.

The leaves do not become alternate by any development of internodes but are arranged in a second manner, by a twist through a semicircle.

Mint Flowering.—Mr. Henslow observed that the common garden Mint is coming into blossom abundantly this season, and exhibited specimens in flower from Ealing. The shoot brought by Prof. Ward was also in bud. Mr. Henslow observed that at present the flowers are all female only, with rudimentary stamens—hence, like so many other Labiates, it will probably prove to be gynodioecious.

Water Culture of the Potato.—Dr. Masters remarked on some experiments he had made with Potatoes grown over water that they had produced an abundance of roots, and even some flowers, but no attempt was made to develop any new tubers.

ANDROMEDA (ZENOBIA) SPECIOSA VAR. CASSINEFOLIA.

THIS plant is a native of North Carolina in the neighbourhood of Wilmington and Fayette Town, also found in the Pine barrens along the coast as far south as Florida. It was introduced into England at



FIG. 12.—ANDROMEDA SPECIOSA CASSINEFOLIA.

the beginning of the present century by Fraser, who, at that time, had a nursery in Sloane Square.

An illustration was published by Sims in the "Botanical Magazine," plate 970, under the name of *Andromeda cassinefolia*, but expressing his belief that this and *A. pulverulenta* are but varieties of one species. This view has since been confirmed by the American botanists, notably by the late Dr. Asa Gray, who has brought both forms under the *Andromeda (Zenobia) speciosa* of Michaux in the "Flora of North America," vol. ii., part I., page 31. At Coombe Wood it attains the height of 3 to 4 feet, flowering during the end of June and beginning of July.



GRACE DARLING.

NOT the woman whose noble deed has made her name a household word in this our sea-girt isle, but the Rose—a variety that will not, I think, be soon lost sight of. But what is she? I ask, because at the Bath Rose Show of 1888 it most unfortunately fell to my lot to be obliged to disqualify a splendid stand of twenty-four Teas coming from that prince of Tea growers, Mr. Prince. It was a very painful task to my brother judge and myself, but looking at the N.R.S. catalogue I did not see what other course we could adopt. I had a long talk afterwards at the railway station with my old friend Mr. Prince himself, who, I am bound to say, took the disqualification most kindly. The stand was so much ahead of all the others that even without the Rose, judged by points, the stand must have led by many points.

I was unable to get to Bath this year, but I have asked myself several times this season, looking at the reports of shows—Did we do right? Several times I have seen in your reports of Rose shows this same Grace Darling figuring amongst the Teas, and at the Gloucester Show there is my old friend, nothing daunted, taking first for eighteen Teas, and amongst them is this same Grace Darling. Nor is it to be wondered at if in amateur collections this Rose should appear in a Tea stand, for certainly in the catalogue of one of the most successful nurserymen this year amongst the Teas I notice the same name. Again I ask, What is she? Looking at the foliage, the style of growth, and the flowers I should place her among the Hybrid Teas. I have not seen an N.R.S. list of Roses for 1889, but in 1888 she was distinctly placed in this "black" list, and as far as my judgment goes rightly, but I should be very glad to know what her position really is.

The National is our law-giver, like the Marylebone in cricket, or Wimbledon (for the new shooting ground will be unable to shake off the aroma of the name of Wimbledon for a long time) in rifle shooting. The rule of head quarters must be law, and I apprehend must govern the ideas and decisions of judges, even when the exhibition is not affiliated to the National. As nothing is more annoying to the exhibitor and the judges than disqualification the point should be definitely settled.—Y. B. A. Z.

THE ROSE CONFERENCE.

I HAD looked forward much to the Rose Conference. I had never been to the Royal Horticultural Gardens, or, as it chanced, to any part of the neighbourhood of Chiswick, and, as a humble lover of gardening, I hoped to see much to instruct. Class 1 in the schedule of exhibits was a magnificent idea, and as an exhibitor I expected a wonderful sight, worthy of the highest gold medal ever struck. I was much interested in the prospect of seeing and hearing some of the great French Rose growers, and was prepared to listen respectfully to the learned Doctor from St. Petersburg, but I am not acquainted with the Russian language, and confess that I contemplated the possibility of new Roses with Russian names with consternation.

The excellent book of arrangements instructed me, hailing from the east, to find my way by rail to Gunnersbury station, which the map showed to be near to the gardens. I did so in good time, and having alighted alone, inquired my way of a railway official. "Jem," says he to a subordinate, "Where's the Show?" It was rather odd, I thought, that he did not know himself, and under the circumstances I was not much surprised that Jem was nearly as ignorant; he could only opine that it was "Somewhere past the Green." I would inquire outside, and did so of a man mending some palings. "Can you tell me the way to the Royal Horticultural Gardens?" No, he knew nothing about it. "Do you mean to say," said I, wondering more and more, "that you never heard of the Royal Horticultural Gardens?" "No," he answered emphatically, "I never did, and what's more, I —" Ah! a vulgar fellow, but I will inquire at that respectable shop, where I shall be fully directed, no doubt. The chemist was most courteous, but he, too, appealed to his boy, and the underling again was not without a glimmer of knowledge. He also fancied it was "Somewhere past the Green." "The Green?" "Yes, Turnham Green." Ah! to be sure; this was more like. A very old conundrum, which alluded to the boiling of Peas, came into my mind, and suggested at least a flavour of horticulture. I started, therefore, in the direction which I was informed would lead me to the Green, and very soon was fortunate enough to meet a policeman, leisurely strolling along his beat. Ah! I thought, now I shall be accurately directed; how useful these men are to wandering strangers from the country like myself. "Can you tell me the way to the Royal Horticultural Gardens?" Of course, his face brightened with intelligence at once. "First turn to the right, and you will see the Gardens before you just at the bottom of the street." Much cheered I hastened on, and there they were. But I don't see any entrance gate. "Hullo! what's this?"—"Messrs. —, Nurserymen, &c.," on a large board. Fortunately my mind had not time to grasp the full enormity of the fact that even the policeman of the place did not know of the existence of the Royal Horticultural Gardens,

before I spied the nurseryman himself among his young trees. He did know, and kindly directed me, and in a short time I was entering the gates, less sanguine than before, but at least in the company of a real live rosarian, Mr. B., who joined me as I came in.

Now for the exhibition tent and class 1. Well, I think we will draw a veil, confess Sutton to have been first and Chiswick second in exhibition Roses on July 2nd, omit any reference to classes, and briefly mention anything that appeared worthy of note to a lover of Roses and Rose shows. A very fine bloom of Madame Laeharme, as good a specimen as I ever saw, quite equal to Merveille de Lyon, caught my eye in some stand whose owner's name I have forgotten, and showed that one great flower at least had escaped the clutches of Sutton. Messrs. Rumsey showed Julius Finger, H.P., and Viscountess Folkestone well, and a fine bloom of Madame Montet came from Messrs. Keynes and Williams. Of newer Roses the buttonhole Noisette L'Idéale, shown by Mr. G. Paul, is charming, and will make a beautiful pair with W. A. Richardson. Rosa rugosa alba is lovely; there is such distinct character in the foliage and refreshing vigour and brightness of green in the young shoots that it is a beautiful plant by itself, even without the fine single white flowers or the bright red hips which follow. Duchess of Albany, H.P., is, I hope and do not doubt, better than as shown. Of the character of the botanical specimens I am not competent to speak, but I had hoped to see many appliances for Rose growing shown, and had intended to exhibit some caps for protecting Tea blooms myself, but had not been able to test them sufficiently.

And now, after some refreshment, for the Conference. The President's opening address was capital. It was, perhaps, in some degree his fault that the readers of papers which followed seemed dull by comparison, but where were the foreigners? Alas! they were not there. And at the conclusion of Mr. W. Paul's interesting paper on Rose classification, I left to catch my train, wondering at the quantity of groups and sub-species that are unknown to myself, and some others perhaps, whose Rose world consists of nothing but H.P.'s and Teas, and thinking how difficult it will be to disentangle them all twenty years hence at the present rate of hybridising. How interesting, by-the-by, a paper on the breeding of Roses would have been, not only on the raising of chance seedlings by some of the French growers and our own two Pauls (though perhaps these last do hybridise), but also by Mr. Bennett par excellence, whose seedlings have made such new departures, and by Messrs. Dickson, who, though hampered by distance from the metropolis, have yet accomplished such good results, and earned our confidence in the new Roses they issue.

I have not heard any account of the proceedings on the second day. We know that the Royal Horticultural Society has had of late many difficulties to contend with, which we trust may be successfully surmounted, so that it may take and hold its proper position in the country. It must still, however, be a matter of regret in the interests of the Rose that the Conference was not a more pronounced success; but no blame on this head can possibly be attached to Messrs. Mawley and Wilks, of whom it may well be said:—

"Tis not in mortals to command success:

But they did more—deserved it."

—W. R. RAILLEM.

RED SPIDER.

RED SPIDER is, perhaps, the most destructive of all the insects which the horticulturist has to combat. Being small, and confining its first attacks to the under side of the leaves, it is not easy of recognition in its early stages of development; but in a very short time foliage attacked by it assumes a sickly, yellowish appearance on the upper surface, and the parts immediately over the spots where the insect is at work become dotted with a number of minute whitish specks if the leaves are those of the Peach or Fig tree, but if they are those of the Vine the specks are of a yellowish hue. These specks or dots increase in size until the whole leaf acquires a yellow and mature appearance, and its powers of exhalation and inhalation being destroyed it falls off. The small specks or dots on the upper surface of the leaves are the best evidence of the presence of red spider, and if the under side of such leaves be examined there will be observed between the principal nerves a number of minute insects. These, on being touched with the point of a pin, will be seen to move about at a rapid rate, and if observed with the aid of a lens they will be found to be in constant motion, busy on that part of the leaf which they have for greater security enveloped in a network of the finest threads conceivable. If measures be not taken to check the spread of the insect on its first appearance it will rapidly wrap the leaf in a fine network, and will not cease its work of destruction until the juices of the leaf have been so completely exhausted that it becomes totally incapable of performing any of its functions, and falls.

It is well to remember that the leaf of a Vine or other plant may have every appearance of being attacked by red spider, and yet that the insect may not be present; for the upper surface of a partly scorched leaf has much the same aspect as one suffering

exhibitor as the duplicated classes, I think that it is a truer test of the skill of any grower to win where all the blooms are required to be distinct. I am a strong believer in challenge cups both for the exhibitor and the society who offer them, as I consider no other form of prize will add to the reputation of both so much. But even challenge vase competitions must have a limit in number. The Kingston Society have also encouraged those growers who have never taken a prize for cut blooms in open competition, and all classes of cut blooms are represented at their exhibitions. They were, I think, the first to recognise the merits of the new Japanese Anemone class by offering prizes specially for them.

Kingston Drill Hall has long been noted for its groups of Chrysanthemums; in fact the first groups of the kind now so much in request at exhibitions were staged here by Mr. Orchard, who is the generally acknowledged pioneer of the method of cutting down plants with a view to obtaining dwarf plants for grouping. Many first-class trained plants have also been staged. One other class at Kingston must not be omitted—table plants, which have been here staged in great profusion and of excellent quality. The Kingston Society, like many others, publish the names of the judges in the schedule. This I consider to be a good plan, as it gives confidence to the exhibitor when the judges are known to be competent men. Chrysanthemum judging requires a special training which does not fall to the lot of every gardener. — E. MOLYNEUX.

HETHERBURY, GUILDFORD.

THIS, the residence of H. Selfe Leonard, Esq., is a substantial villa in a commanding situation on the Portsmouth Road. From it there is an excellent view of Guildford with the sluggish waters of the Wey which abound with the yellow Water Lily (*Nuphar lutea*). In full view also there is the old castle of Guildford, the ruins well preserved, and the adjoining grounds laid out in gardens for the benefit of the people of Guildford. The nature of the ground afforded an excellent opportunity to a landscape gardener with an eye to the fitness of things to lay the place out in keeping with the old castle to form, as it were, a harmonious whole; but the gardener was not forthcoming, or his plans were rejected in favour of the geometrical form of garden with its usual concomitant of bedding plants, sub-tropical plants, and a squirting fountain to amuse the children.

It is a great relief to turn to Mr. Leonard's garden laid out in terraces and arrangements of rocks and stones for hardy herbaceous and alpine plants; where every subject is a study by itself, and choice delicate alpines or sturdy herbaceous plants are placed in positions best fitted to their natural requirements. Roses find a prominent place in the garden; and there is also a corner for bedding plants, for we find a colour in the crimson and scarlet of Zonal Pelargoniums not to be found in herbaceous plants at any season, and those who would banish bedding plants a together from the garden must be content to be without brilliant masses of crimson and scarlet, not to mention the lovely shades of rose and salmon colours.

Show Auriculas, Alpine Auriculas, and some of the choicest Primulas are grown in pots. Frames and pits are wanted for many plants of a delicate nature, and unless they are grown in them and sheltered from the weather there is in many seasons a chance of losing them altogether. Many plants are hardy enough as regards frost if they can be kept dry during winter; but this is not possible in our insular climate, and so it happens that wise men who have valuable or choice plants in their possession will take care not to lose them, nor will they place them in a position where they linger out a miserable existence. When a good stock of any particular species has been obtained plants of it may be trusted out of doors in the position that is thought most suitable for them, and experiments may be made with choice plants out of doors in winter, which it would not be safe to make unless a small reserve was held under glass. This remark specially applies to the Primulaceæ. Of this genus Mr. Leonard possesses a very full collection; indeed, a great deal of labour has been bestowed in making the entire collection of hardy plants as complete as possible. I was rather surprised to find so many in flower about the middle of July. The finest display is in May and June.

Some of the Lilies are very beautiful. The fair white *Lilium candidum* was in its prime. It is the loveliest and sweetest of garden flowers, and is best left alone to its own sweet will. Masses of *L. testaceum* were very beautiful; its delicate nankeen colour had a fine effect. *L. pardalinum* is one of the handsomest of garden plants in July, and in good soil grows as tall as a man. Two handsome Acheilles were conspicuous objects. The tallest of the two, *A. eupatorium*, had stems about 5 feet high, each of them furnished with large umbels of golden flowers. *A. ægyptiaca* is not more than half as tall, and is much like the other as regards its umbels of yellow flowers.

The handsome *Platycodon grandiflorum* was flowering freely, and quite as tall again as it grows in our garden. The deep blue colour of the flowers, 2 to 3 inches across, are very effective in the rock garden.

Actæa alba is thought highly of as a tall-growing decorative plant. It is the white Baneberry, producing white berries with red stalks from its bottle brush-like flower spikes.

Dictamnus Fraxinella, flowers pale purple and pure white, are splendid garden plants. Although we have grown this plant for years I never noticed that its seed pods were perfumed like the Lemon-scented Verbena.

Heuchera sanguinea was freely producing its spikes of blood-red

flowers. This is a new or at least recent species, and is an excellent plant for the front rows of herbaceous borders or the rock garden.

Erigeron mucronatum (*Vittadenia triloba*), is a very pretty Daisy-like free-flowering plant. It is termed the Austrian Daisy; the flowers open pinkish and change to white, so that a dense mass of flowers have a charming effect.

Two Gentians were in flower, both of them producing their flowers in clusters on erect stems—viz, *G. septemfida* and *G. cruciata*. The Gentians are all beautiful and interesting plants, and do well in Mr. Leonard's garden on the chalk.

Dracocephalum grandiflorum is a beautiful plant, well grown here. Its intensely blue Salvia-like flowers cannot fail to please. *D. altaianse* is also a very pretty plant, with Gentian blue flowers.

The *Ranondias* are grown in great numbers, mostly in pots. The purplish-flowered variety plentiful, the white form scarce, and slightly tinged with blue; but, as Mr. Leonard remarked, for all practical purposes it is white.

Irises are grown in immense quantities, and the soil, though comparatively dry in summer, seems well adapted for the moisture-loving *I. lævigata* (syn. *Kæmpferi*), which was making vigorous growth.

Grand masses of the finest of the *Onosmas* (*O. taurica*) were in flower. Its drooping clusters of yellow flowers are distinct and pretty. *Edraianthus dalmaticus* was producing freely its heads of purplish flowers. Some of the dwarf *Linarias* were scattered promiscuously about the garden, the prettiest of them being *L. alpina*. *Dianthus* in many species, *Spiræas*, *Campanulas*, and *Digitalis* were abundant in the dressed garden. Outside of this is a space set apart for a wild garden, and a very pleasant place it is in summer, with all sorts of plants in a tangle—Poppies and wild Strawberries, Sedums, tall *Campanulas*, the *Rosa rugosa*, and the banks where the wild Thyme grows, Lilies towering above the tall Grasses, &c.

Rubus canadensis is a useful species for the margins of shrubberies. Besides his large garden, which one would think sufficient to absorb all the spare time of a busy city man, Mr. Leonard is much interested in the Millmead Nursery of Mr. Harper. It has been formed for hardy herbaceous and alpine plants principally, and they succeed admirably on the rich loam over the chalk. The leading feature of the nursery is to supply choice plants of this kind in large established plants at a cheap rate. An amateur may not succeed even with well established plants of difficult species, but he has a better chance to do so than if he received a scrap of a plant not well established. The climate of Guildford and the fine loam over the chalk seems right for alpine, but those who fancy there is a royal road to success will find themselves in error. The plants must be placed in the right positions, some of them in shallow high ground amongst rocks and stones, others in the deep rich loam of shady borders, and again others well exposed to the sun, and a man's heart must be in his work. Mr. Leonard has a good knowledge of the plants both as regards their names and their cultural requirements, and as regards the latter he is well seconded by his excellent gardener Mr. Harper. Together they have accomplished excellent work, which is not yet finished. The owner of the garden has his head full of large schemes for the future.—J. D.

VINES FROM SEED.

Sow in the open ground a Grape seed, bestow on the young plant all imaginable care, and you will have to wait at least five or six years before being able to eat the first bunch of Grapes. By forced culture this result can be obtained in four times less time. M. Etienne Salomon of Thomery has already shown Vines from seeds from fifteen to eighteen months old laden with golden bunches. This is the process for obtaining early fruiting. The seeds are sown in pots, which are placed in the frame of a conservatory, the temperature of which, kept during the first fifteen days at 68° Fahr., is afterwards raised progressively to 86°. Under the influence of this temperature the seeds are not long in germinating. The young plants rapidly increase in height, and as soon as they have two or three leaves they are again placed in pots 3 inches in diameter. After watering the pots are plunged in heat, and they are watered frequently in order that the growth of the plants may not undergo any check. When the pots are full of roots a removal to a larger pot becomes necessary.

It is not necessary to say that the nourishment given to the plant is in proportion to its growth. If the soil of the pot is not sufficient to nourish the Vine, the growth of which should be quickened, they must be watered with liquid manure—stable water and guano dissolved in water. The temperature of the house being always maintained at 86° one understands how rapid ought to be the growth of the Vines. The plants are pinched when they are 2 feet high, and again when the branches have attained a height of 2 yards.

The sowing being done in the month of February, the Vines have attained the desired development towards the end of summer. A little air is afforded them, and they are more and more exposed, until they may be taken out of the house without danger in order to ripen the canes. At the approach of cold weather they are taken into a cellar or under a shed to protect them from the cold. In December, January, and February they are taken to undergo the forcing process. The Vines in pots having their branches rolled in spirals on stakes, are at first placed in a temperature of 43°. Progressively the temperature is raised, bringing it at the end of from thirty-five to forty days, to 77° or 86° Fahr. If the operation is well conducted—that is to say, if the heat is gradually raised, and if the waterings are abundant, without, nevertheless,

being in excess, the plants flourish vigorously, and flowers appear from the month of March, a little more than a year after the sowing of the seed. M. Etienne Salomon presented for the first time in 1886 at the meeting of the French National Horticultural Society, seedling Vines, obtained by this process.—(*Le Voltaire*.)

NATIONAL CARNATION AND PICOTEE SOCIETY'S SHOW.

IN your kindly and appreciative notice of the above you remark that besides well-known growers like Messrs. Douglas, Turner, Henwood, and Phillips there were others represented whose names are not so familiar. There were also some older even than these. The doyen of the exhibitors, Mr. Joseph Lakin, was there. His name should be pretty familiar now, as he has been showing Carnations, I believe, since as far back as the forties, when he lived at Derby. I should grieve to number you among those who know not Joseph. Just as Dean Hole used humorously to speak of himself as the greatest clergyman in the Church of England, so Mr. Lakin might say that he was the biggest man at every Carnation show he attends, and not always merely by reason of his inches either. Some of the finest first prize twelves, both of Carnations and Picotees, have been staged by him. As a seedling raiser he is well to the front. Many of our best selfs have come from him, such as Polly Clarke, peach; Emma Lakin, the most beautiful of all the white selfs; Black Knight, purple maroon, a grand bloom of which was shown by Mr. Henwood; and I believe he has others as good to come. His two latest exhibited seedlings—a fine pink and purple bizarre, and an exquisite wire edge purple Picotee—were deservedly first in their classes on Tuesday. Hale and hearty, he is yet full of wrinkles, but they are the sort of wrinkles that young growers love to acquire, and which he is every ready to impart to them. Another old floricultural hand present last Tuesday, and rarely absent from a show of Carnations in the midlands or the south, is Mr. Thomas Anstiss of Brill, Oxon. The raiser of more than one good thing himself, he will perhaps be best remembered as the grower who first introduced the now famed Favourite (scarlet edge Picotee) to public notice some five years ago, when he showed it in a remarkably fine first six Picotees at South Kensington.

These two growers the last season or two have rather fallen away from their accustomed high positions as exhibitors, having evidently been drawn aside by the fascinations of seedling raising. One cannot eat one's cake and have it.—M. ROWAN.

SUMMERVILLE, Co. WATERFORD.

A MARINE RESIDENCE.

SOJOURNING at the beautiful health resort of Tramore, on the Irish south coast, some half dozen miles from the important town of Waterford, which is in direct steamboat communication with most parts of England and Scotland, and hearing much of the marine residence of the Hon. Dudley and Lady Camilla Fortescue at Summerville, I resolved to drive over and see what trees, shrubs, and flowers lived and prospered in the immediate neighbourhood of the Atlantic Ocean, for this charming place is situated just round Brownstown Head, and on an inlet of Tramore Bay.

Tramore is situated on a warm southern shelving slope of this broad bay, and is remarkable for being always dry and salubrious. One hour after the heaviest downpour finds the town and the wide-extending sandy beach—one of the finest promenades in the British Isles when the tide is out—perfectly dry, and tempting to the pedestrian, and here on the numerous grassy slopes and improvised gardens can be drunk in the ozone-laden pure Atlantic breezes. Though I feel I should be a benefactor to your readers in bringing this health resort at length under their notice, and I speak from an acquaintance with most parts of the British Isles, I must not further digress.

I was fortunate in finding the head gardener, Mr. J. A. Calthorpe, at home, and he courteously showed me around. The residence is extensive, and was built by the present worthy proprietor on his return from Ceylon about 1876, so that he might live on his estate and perform the duties of a resident landlord. Though connected with so many noble families in Great Britain, this, I understand, the hon. gentleman and Lady Camilla have done every year since, performing all the public functions their social positions involve. I mention this, as it is too common for Irish noblemen and gentlemen to abandon their residences and estates to agents, and of all the departments none suffers more from this than the garden.

The Flower Garden.—This is in front of the residence, and contains brilliant beds of the customary Pelargoniums in variety, among the rest one named Mrs. Huish (raised at South Moulton many years ago by Dr. Huish, the vicar), and retained at Lord Fortescue's and here since. It is a purple crimson, very brilliant—dazzlingly so—and even here comes perfectly round with large and numerous trusses. I doubt if Mr. Cannell has anything better for bedding. Another somewhat distinct and free blooming would be Sir John Franklin, seemingly an advance on Lady Sheffield. There were distinct beds—scarlet and white Vesuvius, from their brilliancy and rude health would seem not to object to a douche bath of marine spray, and this must be calculated on when the Atlantic is tempest-tossed. The same applies to beds of Madame Desgranges, Precocité, and Lyon Chrysanthemums, just now coming into bloom, purple and white Violas, Halleri, maximum, and Etoile d'Or Marguerites.

The Plantation and Pinetum.—These are extensively situated on the southern front of the residence, and under the special care of the honourable proprietor himself, evidently for the purpose of gradually finding out what trees and shrubs of the better class would be likely to do well with such unfavourable surroundings of soil and position. I only took the names of a few, and they will have an interest for those planting around marine residences. It goes without saying that all the hardier Firs, Spruces, Larches, and Pines grow freely, and after those the most numerous Coniferae were Cupressus macrocarpa, and what seemed robust growing varieties of it; Abies Nordmanniana, Cupressus Lawsoniana, Pinus excelsa, and several handsome specimens of Cryptomeria elegans. There are several others, but writing from memory and without books of reference I cannot include them. Among choice shrubs by far the healthiest and most numerous as well as most effective were the quantities of Escallonia macrantha—seemingly, from the numerous specimens I noticed, from the Isles of Bute to Eastbourne, Sussex; and from Antrim to Queenstown, the most suitable of all flowering evergreen shrubs. Then came Cerasus lusitanica and L. rotundifolia; Rhododendron ponticum, Quercus Ilex, Grisellina littoralis—I might have bracketed this with the Escallonia, and added Euonymus to make a good evergreen trio. By a wall of the garden very healthy were Forsythia viridissima, Berberis fascicularis, Jasminum nudicaule, Osmanthus rosmarinifolius, and Carpentaria californica. The Nepaul Laburnum and Rhus cotinus had a warm corner, and seemed to exult in it. Though I have had the New Zealand Flax (Phormium tenax) and Pampas Grass (Gynerium argenteum) killed outright inland, here they luxuriate. The same applies to a Fuchsia named sanguinea (12 feet shrubs, a mass of bloom); Hydrangea paniculata, Ligustrum ovalifolium, and Cistus laurifolius.

The Kitchen and Fruit Garden.—Here we arrived next and were greatly struck at the entrance with the floral wealth of the 12-foot central borders, backed by low concrete walls for training the customary espalier and cordon Apples, Pears, and Cherries, each being suited to the respective position and aspect they are found from experiment to do best in. Every gardener finds, as does Mr. Calthorpe, that it by no means follows that because Winter Nelis Pear does well against a wall with a northern aspect that the more fastidious and desirable Marie Louise will do so. On the other hand Cox's Pomona Apple will bear finely here where Ribston Pippin would have no chance. A constant experiment thus has to be carried on—testing soil, position, the weather, and mechanical appliances. I am sorry to say, looking back at my rambles through most gardens this year, the fruit crop is generally very unsatisfactory. Here, I understand, on most of the wall Pears and cordons the show of fruit, or rather flower, was most promising to-day, and after the storm of to-morrow all hope was lost, as some of the branches were wrenched off, not to mention fruit or flower buds. Beurré d'Amanlis has a few score fruit, however. Usually here Williams' Bon Chrétien, Winter Nelis, and Beurré Diel among Pears, and Cox's Orange Pippin, King of the Pippins, and Lord Suffield amongst Apples are the most satisfactory. There is a fine outdoor crop of Figs, and Mr. Calthorpe informs me they are usually very good. His greatest successes are with Melons, her ladyship prefers them to anything met with on your side, so frequent supplies must be despatched to the London residence. The method of growth is a heated pit—two 2-inch pipes in spring and sun heat in summer alone. The varieties are Blenheim Orange (Carter), Hero of Lockinge, and Horticultural Prize Gem. This last has the welcome peculiarity that it sets its own fruit. Mr. Calthorpe thinks this is due to a small black insect he finds passing from one to the other, male and female flowers, but I also noticed both grow close together on the same vines. Several vines had as many as four large Melons, from 4 to 7 lbs. each swelling. Strawberries are largely grown under considerable soil difficulties; the best old varieties were President, and now Elton Pine, Pioneer, and British Queen did fairly. Next year he means to have Noble, King of the Earlies, and from Mr. Gilbert's recommendation in the Journal, that other creditable hybrid of Mr. Laxton, "A. F. Barron." Sutton's Favourite, a crispy curling Lettuce, has the preference, and the finest piece of Spanish Onions I noticed this year was here, in Carter's White Spanish. Telegraph and Stratagem are still the favourite Peas of twenty varieties.

Vineries, Stoves, Intermediate, and Greenhouses.—Including divisions of the several glass ranges there are about a dozen houses, but it is hopeless to expect several valuable pages of the Journal to do them justice, nor is there so much necessity, as most of the occupants of the two last are in the open air, and much of the former are of the customary description. Mr. Calthorpe is a distinguished prize Grape-grower, and this year he is likely to maintain his reputation, especially with Lady Downe's, Black Hamburgh (both in the early and late vinery), Gros Colman, Buckland Sweetwater, White Alicante, Foster's Seedling, and Muscat of Alexandria. So far the crop is heavy, promising, and well done.

Though anxious to avoid editorial censure I cannot pass without allusion to a house of specimen Colouses, remarkably brilliant, tall, and richly coloured. The varieties principally were Duchess of Edinburgh, Ariel, Crimson Gem, Scapin, Lord Rosebery, Rosenthal, Elegans, and Countess of Dudley. In the stove noticeable were specimen Crotons, Dracenas, Marantas (six varieties), Calanthes, Dieffenbachias, Pandanus Veitchi, Phaius, hybrid Cypripediums, Lycopods, Palms, Tree Ferns, and tastefully interspersed here and there Grevillea robusta, Asparagus plumosus, and Acacia lophantha. There were large collections of Gloxinias, Caladiums, Begonias, Adiantums, and the customary good things in this and the succeeding houses; but I pass on, noticing the

profusion of such climbers as *Bougainvillea glabra*, *Plumbago capensis*, and *Schubertia suaveolens*, and the very remarkable specimens of *Adiantum trapeziforme*, *A. gracillimum*, *A. farleyense*, and *A. Williamsi*—the former the finest I ever noticed of the kind.

Knowing something of the *Summerville Chrysanthemums* as a judge for some years, I was not surprised on emerging from the houses to see about 300 varieties, including all the newest introductions, grown both for exhibition and winter decoration. The temptation is strong to prolong my notes where there is so much worth observing, but I cannot draw to a close without asking your permission to warmly acknowledge the hospitable and courteous welcome of Mr. and Mrs. Calthorpe, and to include therein the steward and manager, Mr. Fechney, who showed us many things well done in his own department—an excellent specimen of the intelligent Scotch agriculturist.—W. J. MURPHY, *Tramore*.

TRENTHAM HORTICULTURAL SHOW.

THE second Show in connection with the Trentham Horticultural Society was held July 25th, in the splendid grounds of Trentham, by kind permission of the Duke of Sutherland. The prospects of this young Society are very encouraging. The Show, which was a good one in every respect, reflects great credit upon the promoters; the arrangements, likewise, were perfect, the weather fine, and the company large. Free access to the greater part of this princely estate when opened to the public, which was highly appreciated. The Show was opened by the Duke, accompanied by the Duchess, and many ladies and gentlemen.

The principal feature in the plant classes were the groups arranged for effect. A splendid group, not for competition, occupying the whole end of one of the spacious marquees from the Trentham Gardens, was a great attraction. Many fine Orchids and foliage and flowering plants were arranged in an artistic manner. The first prize for a group in competition, open to all, W. Thompson, Esq., Stone, secured (Mr. Stevens, gardener). This group contained many fine Orchids. The cut flowers, especially Roses, were very fine. First secured in the larger classes by Messrs. Dickson of Newtonards, Belfast, who showed well for bouquets and buttonholes. Messrs. Perkins and Son, of Coventry, were first in a good competition, Mrs. Blair securing first for epergne, a graceful arrangement.

Fruit was shown in quantities. In the collection of eight dishes Mr. Thorpe, of Newark, was first, closely followed by Mr. Gilman of Ingestre, and Mr. Edmonds of Bestwood. For two or three bunches of black Grapes Mr. Wilkie, Creswell Hall, was first, Mr. Edmonds securing like honours for whites. In a strong competition for collection of vegetables found Mr. Fitzherbert to the fore, the quality being excellent. The amateurs and cottagers showed well, and are to be congratulated upon the qualities of their exhibits.

The band of the Royal Scots Guards, under the leadership of Mr. Holland, was engaged, and performed an excellent programme. Although such a number of people visited this Show not the slightest damage was done.



FRUIT FORCING.

VINES.—*In Pots for Early Forcing.*—Those that are to be started in November should now have the wood thoroughly ripe and the buds plump. If not, and they are later this year than usual, keep the house rather warmer by day, say 80° to 85°, closing early so as to raise the temperature to 90° or 95°, and throw the house open at night. Afford water (or liquid manure will help to plump the buds) in sufficient quantity to prevent the foliage flagging, and the latter cannot have too much light. Keep lateral growths well in check, leaving no more than are absolutely necessary to appropriate any excess of nutriment and to prevent the principal eyes starting. When sufficiently ripened, as they are when the wood is brown and hard and the buds are prominent, they should be removed to a position outdoors, standing on slates or boards in front of a south wall or fence, securing the canes to the face of the wall, only giving water to prevent the foliage falling prematurely, and having some waterproof material to throw off the rain from the pots. In this position they will have some rest even if the leaves are not actually shed. When the leaves turn yellow and give indications of falling commence reducing the laterals, and when the leaves are all off prune the Vines, the laterals being cut off close and the canes cut back to the length required. Afterwards put them in any airy, cool, dry place until required for forcing. Keep them dry, but not dust dry, at the roots, and place some dry protective material about the pots to save the roots from frost in case it should gain access to the structure.

Earliest Forced Vines.—The Vines will now require a dry atmosphere to thoroughly ripen the wood, but it will not be necessary to employ artificial heat. All laterals and late growths must be kept stopped, and complete rest afforded by having the house cool and comparatively dry. The borders inside may require water, but if they have been mulched it may not be necessary, whilst the outside borders may

need covering with dry straw or bracken to throw off heavy rains. This is absolutely essential to ensure complete rest, so necessary for Vines long subjected to forcing. A too moist condition of the soil tends to late growth, but there should be sufficient moisture to maintain growth in the laterals in order to prevent the premature ripening of the foliage. In most cases it will be sufficient to allow a moderate extension of the laterals. Where the Vines are in an unsatisfactory condition prepare for lifting at an early date, getting fresh loam and clean drainage, so that the work can be done quickly when started. There is no danger of losing a crop, only operate upon a portion of the border at once, say the inside border one year and the outside the following. It is desirable to lift the roots and lay them in fresh soil nearer the surface whilst the foliage is on the Vines, therefore work of this kind ought not to be delayed in the case of Vines that are to be started early in December, which will need pruning by the middle of September, or, in the case of lifted Vines, a little later.

Vines not Regularly Subjected to Early Forcing.—Those that have not hitherto been started early will need, as soon as the crop is off, to be thoroughly cleansed by syringing, or the application of an insecticide; and if there is any doubt about the ripeness of the wood or the plumpness of the eyes, it will be necessary to keep the house rather close by day, but with sufficient ventilation to cause evaporation and allow the moisture to escape. Give no more water to the border than will prevent the foliage becoming limp. If the weather prove moist employ fire heat in the daytime to maintain a temperature of 70° to 75°, with moderate ventilation, and turn the heat off at night to allow the pipes to cool, increasing the ventilation, so as to ensure a thorough draught, and this will soon cause the wood to harden and the buds to become plump, inducing rest, which for Vines that are to be started in December should be complete from the middle to the end of September. When the wood is ripe ventilate fully day and night.

Vines Cleared of their Crops.—Cleanse the foliage by means of the syringe or engine, and if necessary apply an insecticide. If there are any mealy bug or scale promptly use petroleum—a wineglassful to four gallons of water, in which 8 ozs. of soft soap and an ounce of soda have been dissolved, keeping the mixture thoroughly agitated by stirring briskly with a broomhandle whilst being applied to the Vines, which must be done thoroughly, wetting every part. It is best done on a dull, calm afternoon, and should be repeated two or three times at intervals of a few days. If there be any plants they must be removed; and if the roots of the Vine are near the surface cover with dry, short material, to absorb the waste. Keep the laterals fairly in hand, not closely pinched, unless the Vines are very vigorous, and are not ripening the wood well, in which case keep the house rather dry at night, with all the ventilation possible, and somewhat warm and close by day; this will tend to the maturity of the wood and buds. In stopping vigorous Vines regard must be had to the principal buds, not stopping so close as to jeopardise their starting into growth through an excess of sap. Such Vines should also be kept without water until the foliage is becoming a little limp. Vines that are not strong, having been enfeebled by continued cropping or other causes, should be encouraged to make growth by applying liquid manure to the border. But whatever superfluous foliage is made, it must not be allowed to interfere in any way with the free access of light and air to the principal leaves, which must be kept healthy, so that they may appropriate some of the extra food, and store it in the buds and adjacent wood. Ventilate freely day and night.

Grapes Colouring.—Admit air constantly, enough with a gentle warmth in the pipes to insure a circulation. Whilst ripening, many, indeed most Grapes, swell considerably, therefore there must not be any deficiency of moisture in the borders. Give, if necessary, a good supply, and in the early part of the day, so that superfluous moisture may be dissipated before night. If the Vines are heavily cropped afford liquid manure, but not strong, and allow them plenty of time, otherwise if there be any hastening of the ripening and a deficiency of nutriment the fruit may be defective in colour. A good rest at night in a temperature of 60° to 65° is a great help to Vines taxed to the utmost by weight of fruit. A moderate amount of air moisture is also essential to the health of the Vines, sprinkling available surfaces occasionally, and, if possible, allow the laterals to extend, but overtaxed Vines can rarely cater for more than the principal leaves and Grapes.

CUCUMBERS.—Any house or frame at liberty may yet be planted with Cucumbers, the frame having a bed of fermenting materials, which will give a supply of fruit in September and continue nearly to Christmas if due regard be paid to lining the beds and to protecting the plants by mats over the lights at night after the weather sets in cold. Let plants in frames or houses be thinned at least once a week, and in growing weather twice, removing exhausted growths to make room for young bearing shoots. Keep the shoots well stopped to one joint beyond the fruit, or at the fruit if the plants are vigorous and showing no signs of exhaustion. Always allow weakly plants more extension, and crop them lightly. Maintain a steady temperature of 70° at night, 75° by day, 80° to 85° with sun, closing early to increase to 90° or 95°, the bottom heat being kept at 80° to 85°. Maintain a steady root action by surface dressings of sweet lumpy manure, and pay due attention to watering two or three times a week. Syringe in the afternoons of hot days, but avoid late syringing, for the foliage should be dry by sunset, and commence ventilating early, as it is important that the foliage be dry before the sun acts powerfully upon it. The autumn fruiters should be planted on hillocks or ridges, moderately firm, maintaining a moist and genial atmosphere, and they will grow and show fruit in plenty shortly.

THE FLOWER GARDEN.

Layering Carnations.—Layering is the surest method of propagating border and other Carnations and Picotees, and the earlier this is done in August the greater the certainty of well-rooted plants being obtained. First loosen the surface soil round the plants to be operated upon, and then add a layer, 2 inches thick, of fresh loamy compost, to which sharp sand or road grit has been freely added. Select moderately long flowerless growths, trim off the lower leaves, and half cut through at a joint where the wood is moderately hard, give the knife an upward turn so as to form a tongue about an inch in length, and then carefully bury the cut part in the soil, a rather strong peg being necessary for keeping it in place. In dry weather water should be given whenever the new soil is approaching dryness, and by the end of September or early in October most of the layers will be sufficiently well rooted to be potted or transplanted. Choice border varieties in pots may be planted out on beds of fresh soil, nothing being better than a frame on an exhausted hotbed, with the lights taken off, and every suitable growth layered. These, when rooted, ought to be placed singly into 4-inch pots, and kept in cold frames or pits till the spring, when they may be either planted out or shifted into larger pots.

Seedling Carnations and Picotees.—These, if given ordinarily fair treatment, flower splendidly, masses of showy flowers being produced during the summer. In most instances a considerable number of single varieties are unavoidably included in every packet, but even these are attractive and serviceable. So freely do these seedlings flower that the majority fail to form growths for flowering during the following summer, and this necessitates raising a fresh stock each spring. If the advice previously given on this subject has been taken, the seedlings raised this season are now fit for finally planting out. As a rule Carnations and Picotees generally succeed on slightly raised beds formed in a moderately warm aspect. These may be 6 feet wide with a one-foot pathway between, the beds to hold five rows of plants, and which should be carefully moved from the boxes with a trowel and firmly replanted—without burying the hearts—about 12 inches apart. Carnations do not require a very rich soil, but if planted in succession to any other plants that may have exhausted much of the fertility of the ground, this ought first to have a liberal dressing of fresh loam and horse-droppings or old Mushroom-bed refuse forked into it. Slugs are liable to work sad havoc among tender young Carnations plants, and it is advisable therefore to place Cauliflower leaves, heaps of brewers' grains, or other traps among them, the slugs caught on these every morning being destroyed.

Dahlias.—Dull showery weather is most conducive to wood growth, and the plants are generally late in flowering. If quality, or say a few exhibition blooms, rather than quantity are desired, both the leading growths and the branches ought to be freely thinned and carefully tied to the stakes, or otherwise showery windy weather may break them. In order to obtain extra fine show blooms only a few flowers should be allowed to open at one time on a plant, all side buds being removed from the leading growths, and the latter, if it can be managed, should each be staked uprightly, some of the varieties also requiring to be sheltered both from heavy rains and fierce sunshine. Earwigs are apt to prove very troublesome to the grower of large double blooms, and these must be closely trapped and destroyed. They will collect in any dry material, and lengths of the hollow Broad Bean stalks tied to the Dahlia stems prove especially attractive to them. The old fashioned plan of inverting small pots filled with dry moss on the tops of the stakes also answers well, the earwigs collecting in these every night. Dahlias on poor ground will be benefited by occasional supplies of liquid manure.

Spring Bedding Plants from Seed.—There are several useful and showy spring flowering annuals and biennials that should be raised from seed during August and the early part of September. Wall-flowers, Brompton Stocks, Forget-me-nots, Primroses, Polyanthus, Alyssums, Auriculas, Pansies, and a few other perennials and biennials ought already to be large enough to transfer from boxes and pans or the seed beds to nursery beds, from which they may be eventually transplanted to where they are to flower, or they will not prove of much service. Such annuals as Sweet Alyssum, Candytuft, Collinsia bicolor, Cyanus major, Godetias, Limnanthes Douglassi, Saponaria calabrica, Silene pendula compacta, and Virginian Stocks that should be sown from the beginning to the third week in August, according to the locality, or whether naturally early or late. Slightly raised sheltered borders answer well for raising a number of these plants, the seed being sown thinly in shallow drills drawn about 6 inches apart, and if at all dry duly moistened prior to sowing. If the seedlings are lightly thinned out where at all thick the reserved plants may eventually be transplanted direct to where they are to flower, this being done in the autumn after the summer occupants of the beds are cleared off, or not till the spring.

PLANT HOUSES.

Gardenias.—Plants that were not allowed to flower in spring but induced to make growth in brisk heat should now be well developed specimens with hard wood. They should enjoy cooler and more airy treatment with exposure to full sunshine to further harden and ripen their shoots. This will have the effect of bringing growth to a standstill, and flower buds will quickly form. Young plants, or those that were cut back, may be placed into larger pots. If this is done without checking the plants they will quickly root freely in the new soil, and continue to make luxuriant growth. Fully expose these to the sun, and maintain the structure in which they are growing close and

moist. Use for a compost good fibry loam, one-third leaf mould, sand, and one-seventh of decayed manure. Peat is not necessary in the compost for these plants. If the plants are infested with scale or mealy bug it should be thoroughly eradicated now, especially from the early plants. Insecticides can be used stronger on those with firm wood and mature leaves than can be done with safety after the flower buds have commenced forming. It is a good plan to take the plants outside and wash off the bug with clean water, and then thoroughly syringe the plants with petroleum and water. Three ounces to each 4 gallons of water will be sufficiently strong to destroy scale. The application may be repeated at the end of a week or ten days.

Anthurium Andreanum.—Young plants raised from cuttings will have filled 5-inch pots with roots. These may be removed into 7-inch, using rough fibry peat, charcoal, and sand. The surface may be covered with living sphagnum. The soil at this stage need not be elevated above the rim of the pot. This can be done as the stem grows and roots are produced from it. Grow these plants under warm and moist conditions, and they will soon attain sufficient strength to flower more or less throughout the winter.

Alocasias.—These as well as all the ornamental foliage Anthuriums must be examined critically, for if red spider becomes established upon them it will quickly destroy their beautiful foliage. If it makes its appearance sponge the foliage with a weak solution of any insecticide recommended for the purpose. This should be followed by placing the plants over a tank, and thoroughly syringing them with the same or a similar solution, which should be repeated at intervals of a week until every trace has been destroyed.

Allamandas.—Where these and other similar plants are trained under the roof of plant stoves they must be judiciously thinned to prevent them overshadowing the plants growing beneath them. At this season of the year they grow rapidly, and would soon fill the whole roof if laid in.

Allamandas are very effective when they cover a good space thickly, and on this account are often left so thick as to prove a serious injury to other plants. The various plants beneath will grow quickly, even rapidly, and for the time look well, but they invariably fail soon after the approach of winter. The plants beneath must in most cases be considered as much as those on the roof, and therefore the shoots of the latter must be liberally thinned out directly signs of crowding are visible. Plants that are confined in pots and have been growing and flowering for some time should be liberally supplied with stimulants in a weak state, or top-dressed with manure and loam in equal proportions.

Leoras.—Plants that have flowered may be cut back thoroughly, cleaned, and started into growth in brisk heat, fully exposed to the sun. They will soon break into growth and flower again in early autumn. Cuttings may be inserted singly in small pots. The young growing ends strike freely in a close frame in a heated structure.

Paneratiums.—These will be throwing up freely and will bear removal to a cooler house without injury, so that a more lengthened succession of flowers may be had. Thrips are usually troublesome at this stage of the plant's growth. The plants can be kept clean by a free use of the syringe; but if they be infested syringe or dip them in a solution of tobacco water.

Gesneras.—Stimulants in a weak state may be given to the earliest hatch of plants. Continue to grow them in a close, warm, moist pit, where the pots can stand upon some moisture-holding material. Be careful that water does not fall upon their foliage, or it will become spotted and disfigured. Later plants may be placed into 5-inch pots in a compost of loam, leaf mould, and sand. Equal quantities of the two former may be used and a liberal quantity of the latter, with the addition of a little decayed manure. Grow these under the same conditions as the earlier plants.

Tydeas of the Madame Heine section should be placed in their flowering pots (5-inch); the same compost will do as advised for Gesneras, but a little more loam may be used with advantage. The plants need the same treatment in other respects, but need not be grown quite so warm. Plants that are established in their flowering pots may have their points removed to induce them to branch. These, as well as Gesneras, need shading from bright sun.

THE BEE-KEEPER

NOTES ON BEES.

QUEEN REARING.

THE season has been more favourable for queen rearing than was the summer of 1888. Half of our queens for next season's work are now laying. I have been supplying queens to people who had queenless stocks as "A Hallamshire Bee-keeper" advises—namely, catching the queens as they issued with after swarms. Often we get as many as a dozen at a time, and this is one of the main causes why bees abscond after being successfully hived. I quite agree with "A. H. B. K." regarding the treatment of

young queens. The first meal has more influence on their after usefulness and productiveness than some suppose.

My other half of queens with a few extra are taken from a stock after it had swarmed once, and divided into nine nuclei, each containing three shallow frames and either a hatched-out queen or having one or more cells, the poorest and weakest looking being destroyed. It is not always the queens that destroy the unhatched cells or rival queens. The workers do both as frequently as the queens do.

Owing to the nature of the season there is more honey stored in the body of the hives than usual, so much so that each lot of nine nuclei will require no feeding, which lessens the risk of their being robbed; but from our strong stocks, when nine only are created, the bees are numerous enough to defend themselves if a narrow doorway is given and no work done likely to incite robbing. I have frequently made a dozen to fifteen nuclei from one stock, but when the bee-keeper can afford it, it is better to have the lesser number.

BEE FLOWERS.

Before this appears in print our bees will be amongst the Wild Thyme and the Heather bells, as well as the "bright-eyed" Veronica, which is a honey-yielding plant, and a favourite of the bees. While speaking of flowers I enclose a spray of a Sedum (for naming), one of richest in honey and pollen of any flower, and will grow like other Sedums on soil that few other flowers will. There are few plants that flower so profusely as it does, therefore it must be a profitable one to plant by those who cultivate flowers specially for their bees. There are various shades of colour in this species, and once established, which is easily done, the plants soon give a carpet of flowers.

EXTRACTORS.

Since the extractor came into use this is the first year that its usefulness has been recognised, but even when required we can dispense with it. When our hives are top heavy beneath the supers, it is only the work of a few minutes to transfer the honey frames on the top to the under box, the latter frames and their contents taking the place of the former, this done on a day when no honey is coming in; and if the seals of the comb be scratched a little the honey will soon be taken to the supers by the bees and stored in them in a purer state than if extracted by a machine when every cell was not sealed, and this too with less loss. The divisions are hinged at the back, so that an empty box is all that is necessary to put the frames in for a few minutes, until room is made for their reception by the removal of those in the second box operated on. This is a much better plan than inverting combs; besides, the form of hive reduces the number of appliances in the apiary—a desirable thing of itself.

I thank "A. H. B. K." for his response to my request. The subject will be studied and experiments made with the view of bringing to light all the essential points necessary to queen rearing, for without perfect queens the labours of the bee-keeper are in vain.

THE WEATHER.

For several weeks past the weather has been showery, and practically put an end to the Clover honey season while it was at its best. Our bees were removed to the Heather on July 24th, to the most beautiful bloom of wild Thyme and Heather that has ever occurred to the memory of the oldest person, so the prospects before us are promising indeed, and being three weeks earlier than usual there is a greater likelihood of a large yield. It was the coldest morning we had had for many weeks, the thermometer registering 39° Fahr. with us, but at the Leadhills it was reported that a frost had been experienced having the aspect of a Christmas morning; but it is in the valleys, and not on the hills, that the frost injures vegetation. The climate in that locality is good and invigorating, and the best for restoring the health of invalids that I have experienced. Our bees were transmitted to their standing place more expeditiously than previously, owing greatly to the

proprietor of the Hopeton Arms placing at our disposal a more suitable conveyance.

BEE TOPICS.

While on our journey I had the privilege of being in company with a gentleman bee-keeper. Naturally our conversation was greatly on bees, honey, &c. The idea of bees dropping formic acid into the cell upon the top of the honey just before being finally closed, similar to what our ancestors did to their preserves by pouring a little spirits on the top previous to covering to prevent fermentation, was discussed, my opinion being that bees perform this generally throughout the whole mass while the honey is in the stomach, which can be detected by the change of the flavour of any syrup when taken and tasted directly from the stomach of the bee.

The discussion on the above brought in other topics, among which was that of the injurious effects unsealed honey had upon numerous individuals. The gentleman in question has exerted himself greatly to discover the cause why honey should be injurious to anyone, and invariably he has discovered that it is only in cases where unsealed honey was partaken of that left any ill effects on the individual after. At this stage a stranger gentleman in the same compartment who had been listening to the conversation asked "if he might be allowed to give an explanation." This granted, he continued by saying that he always used honey in the house as food and medicine. For many years he had his supply from Ayrshire, but the connection being broken he applied to a Glasgow house and procured what he considered equally as good honey; but everyone who partook of it was seized with illness, and this on every occasion it was eaten. The honey did not granulate properly, and it was proved afterwards to be unsealed and extracted honey. The above bore out the evidence of my friend, and convinced me that some kinds of honey contain poison until the heat of the hive volatilises it. Such crude honey taken from the combs by an extractor also contains water and pollen the bees intended for their grub, and which never would have entered the composition of honey had the bees been allowed to seal it.

We have frequently advised bee-keepers to be careful to place nothing on the market but honey taken from naturally sealed combs, thereby obtaining a good reputation for themselves and their honey. But there exists a strong desire in some to be rich, and the advice has been disregarded. It is now our duty, under the existing circumstances, to warn the public against buying honey unless that which has to their knowledge been taken from sealed combs. If bee-keeping is to be a success combined with pleasure, the bee must be allowed to complete her work, and all the inventions, which were to some extent intended to supplant her, must fall to the ground; then will there be a greater demand for honey, and the right sort of bee-keepers will increase, and the public will be satisfied and benefited.

ANGLED TIN BAR SECTION CRATES.

It is now several years since I recommended through this Journal the use of angled tin in hives and in section crates. In 1884 I exhibited a hive containing the different arrangements, and was awarded the first prize for it, as I was for many others when in competition with the leading bee-keepers and hive makers of the country, the Judges in this case being practical bee-keepers. The exhibit showed the arrangements for both super and section. The former had a permanent wire or saw web to sever any comb that might be attached to top of hive. Like many other good things, however, it was not at the time much valued, but now it is becoming popular both here and in America.

They are easily made and useful. Tradesmen have machinery which can turn them out both quickly and neatly, but there are some who cannot afford to buy, but who could make them. The following instructions will, I doubt not, help them to it. Get two pieces of hard wood—beech is good—the length, less the thick-

ness of the tin, of the inside of the crate, and 3 inches broad by $1\frac{1}{2}$ thick. Bore two holes to receive bolts about 3 inches from the ends, the exact depth down to the top edge as the half of the tin, which may be $2\frac{1}{4}$ in whole, the half being $1\frac{1}{8}$ to top. The bolts will do with common nuts, but are more handy if little handles extend. After the tins are cut to proper sizes insert the tin and bend to right angles, then take out and close the edges with a wooden mallet; when fully closed pierce a hole for screw, nail close to where the angle will be, now insert the doubled tin again between the blocks, this time three-sixteenths or so above the top; the proper gauge for this is got by two additional holes the proper distance above the line of the top edge of the bolts, which receives two wire pins. Screw the blocks tightly, and separate the edges, which form the ledges, and again beat down. Before inserting the last time cut the tin exactly at the wideness of the crate; it should be nearly an inch from the end, and where the hole should be as near the top edge as possible. When the angles are formed turn the ends round before removing, and the thing is complete. Each piece will cost from one halfpenny to a penny each, according to the weight of the tins. When screwing these on to the crate have two pieces of wood with saw serps the exact width between, that will suit the sections. Nail a lath on each end of these gauges, laying them on the bottom edge of the crate, which for convenience is uppermost, now slip the angled tin into these saw cuts, and screw the tin tightly to the crate. It is not absolutely necessary that there be a tin for the top, but it is an advantage; these do not require the angle or ledges. Where sections are used with bee ways nothing else is required, but when sections of one width throughout are used it is necessary to have distance guides of some sort, a bit of one-eighth sheet lead cut into narrow strips of the desired width, and about $1\frac{1}{2}$ long, then bent in the middle, and made to ride and slide upon the top edge of the tin, is simple and excellent for the purpose. Thus the material for a crate to hold twenty-eight 1 lb. sections will not cost more than from 6d. to 8d., and the time to make will not be more than an hour.—A LANARK-SHIRE BEE-KEEPER.

[The plant referred to is *Sedum ibericum*.]

TRADE CATALOGUE RECEIVED.

W. Baylor Hartland, 24, Patrick Street, Cork.—*Book of Daffodils* (illustrated).



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book on Roses (*J. D.*).—We cannot possibly undertake to say which we consider the "best" book on Rose growing. The different works have been reviewed in our columns.

Books (*J. D.*).—We have never answered a question in the form you request, nor are we likely to do so, as such an answer as you wish would imply condemnation of meritorious works. Reviews of several books have been published. (*C. T. H.*).—Perhaps Mr. Shirley Hibberd's work will suit you, published, we think, by Messrs. Groombridge and

Sons. We do not remember the price, but it will be less than your name.

Paulownia imperialis (*F. Smith*).—The tree must be growing in an unsuitable soil or situation, as, apart from the actual injury to the texture of the leaves, they have an extremely unhealthy appearance. We do not think the cause you assign could have produced such effects without seriously damaging the tree.

Shrubs for Border (*J. W.*).—In addition to those you have, which are some of the best for your purpose, the Gold and Silver Tree Ives—namely, *Hedera arborea aurea* and *H. arborea elegantissima* are fine, *Laurustinus* good, also *Osmanthus ilicifolius variegatus nanus*, *Taxus baccata elegantissima*, *Cupressus Lawsoniana erecta viridis*; *lutea* and *nana glauca* are also very pretty. *Yucca recurva* may be mentioned as a graceful plant suitable for the purpose.

Temperature of Stove, &c. (*Cambridge*).—The night temperature of a stove in the summer months should be 70°, falling to 65° in the morning, or even 60° occasionally. In the daytime the temperature should be kept at 70° to 75° by artificial means, on cloudy days but with clear intervals keep at 80°, and in fine weather the temperature through the day should be 85° or 90°, closing sufficiently early each day to raise it to 90° or 95°, or a little more with plenty of moisture. The propagating house must have a steady temperature of 70° to 75° by artificial means, and in hot weather it will probably be 80° to 85°, the shade making the difference between the temperature in that and an ordinary stove.

Tomatoes Diseased (*F. W.*).—We are glad to know our advice has been of good service to you, and that you have succeeded in checking the development of disease, but judging by the foliage submitted you are by no means rid of it, and a close humid atmosphere would most certainly favour a destructive spread of the disease. Plenty of dry air, both night and day, is the best remedy, and this coupled with a firm root run and uncrowded houses is the only way to combat this most insidious disease. In many instances where these conditions have not been maintained the fungus has spread to a most disastrous extent, not a sound leaf being seen among thousands of plants. You have every reason, therefore, to be well satisfied with the capital crops you are marketing, and it is to be hoped you will succeed in cutting as many Tomatoes as you are ambitious to do—viz., three tons of fruit. Your stock is undoubtedly tainted, and we should much prefer to save seed of the selected variety from plants grown in the open air. If this is impossible we would yet save seed, and watch the seedlings closely. The disease is sometimes apparent in quite young plants. Tomato Advancer will probably be offered for sale in due time.

Carnation Souvenir de la Malmaison (*B. B. C.*).—If your plants are dwarf with good stout shoots at the base, transfer them to pots 2 inches larger. Drain the pots liberally, and press the soil moderately firm. Do not disturb the old balls farther than is necessary to remove the drainage. The soil may consist of good fibry loam two parts, the other part being composed of leaf mould, sand, and decayed manure. One-seventh of the latter will be ample. Stand them outside and water carefully afterwards. If possible, peg the shoots down on the surface of the soil after they are potted. If you wish to preserve the plants for flowering another year, and the growths are long and straggling, the shoots may be trained carefully to stakes after the plants have been potted. When this is carefully done straggling plants may be considerably reduced in height and converted into creditable bushes that will flower again freely another year. To increase the number of your plants, the shoots may be taken, inserted singly in small pots, and stood under handlights until they are rooted. The plant may also be placed out in a sloping direction, and all the growing shoots layered, which, when rooted, can be taken up and potted.

Ficus elastica (*Idem*).—If the pots are full of roots we have no doubt that repotting would improve the plants. You can pot them at once, employing pots 2 inches larger than those they are now in. Do not disturb the old ball further than is necessary to remove the drainage. The soil may consist of good loam and sand, with the addition of one-seventh of manure. Press the soil firmly into the pots. Water carefully until the roots are spreading freely into the new soil.

Marguerites (*Idem*).—These are propagated by cuttings of the young growing shoots, and root freely at almost any period of the year. For bedding, they can either be rooted early in September or early in the spring. We prefer the latter, because large plants can quickly be produced by liberal treatment. From June to September they root freely in any sandy soil in cold frames, either singly, or a number together in pots. Cuttings are liable to damp during the autumn, but root readily enough in a temperature of 60° during the spring months. Plants rooted in August, grown cool, and their shoots pinched, will flower towards the end of March. Cuttings rooted early in the spring will succeed these. Root a few at intervals of a month or five weeks, and you should not be without flowers. Plants rooted in April and May, and then grown outside, will flower splendidly during the autumn. If you want large specimens, plant out spring-rooted cuttings; lift and pot them in September; winter them in a cool house, and they will yield quantities of flower in spring.

Culture of Aphelandra Roezli (*F. R. M.*).—The following note by a successful grower will answer your question:—This is a handsome plant either for the stove or for room decoration. The flowers are of very short duration in a cut state; indeed, for this purpose it is of little

use, as the whole spike is never fully out at one time, and, moreover, the expanded flowers are so very easily shaken from the spikes that the least touch causes them to drop. This *Aphelandra* is easily propagated either by cuttings or from seeds. The latter mode is by far the best; from seeds they grow much stronger, producing finer leaves and flower spikes. The seed is very readily produced if the plants are kept in a dry high temperature when in flower, and not allowed to become dry at the roots. Plants in flower about Christmas will under ordinary treatment ripen their seeds by May, when they should be sown in a moist heat and well shaded; indeed this is a very essential point through all their growing period, for if exposed any length of time to direct sunshine the foliage soon becomes twisted and hard, with, in most cases, a drooping tendency. The seeds should be sown on the surface of a propagating bed, that is, if the material which covered the bed is old leaf soil or spent tan. They germinate freely without any covering, and when the plants are large enough to handle they should be pricked singly into thumb pots, using a mixture of leaf soil and silver sand, placing them on a shelf close to the glass. In three or four weeks they will require a shift into larger pots, say 5 inches in diameter. The soil this time must be more substantial, and consist of good fibry loam two parts, one part of sheep droppings or cow manure, and one part of crushed charcoal and a dash of sand. They should be potted very loosely, care being taken in draining the pots that a little charcoal is used with the crocks, as it tends to keep the roots healthy. If the plants when in flower are removed to a little lower temperature than that in which they have been grown their flowering season will be prolonged. They enjoy supplies of weak liquid manure twice a week all through their growing season; it enlarges the foliage and imparts a deep silvery sheen.

Wireworms in Gardens (R. F.).—We know of no "easy method" of eradicating this pest. Perhaps Mr. Luckhurst's experience may be useful to you, but you may not regard his plans as "easy." He has recorded:—"Very early in the year a field was placed under my care as a kind of auxiliary kitchen garden for the cultivation of Potatoes and other culinary roots. The soil, which for many years had been stirred no deeper than about 4 inches by means of a light one-horse plough, was found to be in a very poor, almost inert condition. A liberal dressing of rich farmyard manure was carted on to it; it was well stirred and thrown up roughly to a depth of fully 9 inches with spades, and in due course about an acre of it was planted with Potatoes. Now, neither in digging nor during the planting were many wireworms perceptible, yet, upon examination a short time afterwards, there was hardly a tuber without several wireworms attacking it—some just commencing operations, others which had burrowed so deeply as only to leave a short portion of their wiry bodies visible, while all with unerring instinct were gathering to the richest feast they had probably met with during their existence. Such an unpleasant occurrence might be regarded either as a serious dilemma or as a capital opportunity of clearing the soil of such a pest, and so saving not only the present but future crops from its ravages. While taking the latter view, the former one, which seemed to point to possible failure, was only felt as a spur to exertion, and a couple of men were immediately set to take up the Potatoes one by one with trowels, destroying every wireworm that could be found, and replacing the Potatoes in the soil as they went along the rows. It was a long and tedious job, but it was undoubtedly a thorough one, for it was computed that upwards of ten thousand of the enemy were destroyed; and so the battle was gained, the crop proving an excellent one, sound and free from every blemish. The experience which has thus been gained will prove invaluable in future practice; and wherever land is found to be infested with wireworms I feel assured that Potatoes placed a few inches beneath the surface, and about 2 feet apart for a week or two, will prove an unailing bait to lure them to destruction." If any of our readers can inform us of an easier and at the same time effectual mode of extirpating wireworms, we will readily publish it.

Vine Leaves Scorched (M. N.).—The cause of the withered condition of the leaves we attribute to defective ventilation, due provision not having been afforded for the exit of dry heated air, and this has encouraged the increase of the small insect, but great Vine pest, the red spider. There is no cure for such leaves as those you have sent, but the evil may be prevented from spreading to the others with better management. At no time should the top ventilators be closed entirely, except for an hour or two after syringing or damping the house in the afternoon, opening the top ventilators an inch or so at nightfall, and increasing the openings immediately the temperature commences rising in the morning. Carefully remove the worst leaves and burn them, and you will destroy many insects that you will not see. Syringe the Vines as violently as you can short of injuring the leaves. A mere squirting will be of no use, but point the syringe between the bunches and drive the water directly to the under side of every leaf, thus giving each a thorough washing. If this work is done thoroughly not many insects will be left on the foliage. Use a gallon of water to each square foot of roof, more rather than less. One good washing of this kind weekly will be more effectual than daily sprinklings. This washing should be done soon enough in the evening for the Vines to get nearly dry before night. Syringe every part of the house well every evening in sunny weather; let not a dry spot remain on soil, walls, or woodwork; also immediately after the sun has left the house, and the Grapes have stoned, sprinkle the paths well with liquid manure. Guano water will do admirably, 2 ozs. of the fertiliser being dissolved in a gallon of water;

but take care to open the top ventilators three or four hours afterwards, as above advised, leave them open all night, and give more air as early in the morning as is required, even if this be at five o'clock, the time depending on the position of the house for receiving the morning sun. Water the roots of your Vines copiously if the soil is in the least dry, not on the surface only, but 2 feet below it. If you carry out these instructions as we should act on them ourselves, your Vines will improve. Late syringing may be done in sultry weather, not on cold wet nights. It is much better to shade Vines lightly than to let the leaves and berries be scorched, as yours are. If your Vines are over-cropped remove some of the bunches.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H. F. E.*).—1, *Hypericum Uralum*. 2, *Pteris serrulata cristata*. 3, *Adiantum cuneatum*. 4, *Grevillea robusta*. (*W. W., Manchester*).—The Corn Mangold, *Chrysanthemum segetum*, a native plant, but much grown now in gardens. (*H. C. W.*).—We do not undertake to name Roses. (*T. H.*).—1, *Rudbeckia laevigata*. 2, Not recognisable. 3, *Malva moschata alba*. (*J. G., Stoke Newington*).—1, *Pyrus Aria*; 2, *Catalpa bignonioides*; 3, *Acer campestre*. (*W. T. T.*).—The plant is *Rubus chamaemorus*, the Cloudberry, which is found in elevated situations both in England and Scotland.

COVENT GARDEN MARKET.—JULY 31ST.

Trade quiet. Soft fruit coming light. Prices generally unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and	2	0 to 4	Peaches, dozen	3	0 to 12
" Canada, per barrel ..	7	0 to 16	Red Currants, per $\frac{1}{2}$ sieve ..	3	6 to 4
Cherries, $\frac{1}{2}$ sieve	6	0 to 12	" Black	5	0 to 5
Grapes, per lb.	0	9 to 2	St. Michael Pine, each ..	2	0 to 6
Lemons, case	10	0 to 15	Strawberries, per lb. ..	0	0 to 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 3	Lettuce, dozen	0	9 to 1
Asparagus, bundle	2	0 to 5	Mushrooms, punnet	0	6 to 1
Beans, Kidney, per lb. ..	0	3 to 0	Mustard & Cress, punnet ..	0	2 to 0
Beet, Red, dozen	1	0 to 2	New Potatoes, per cwt. ..	3	0 to 9
Broccoli, bundle	0	0 to 0	Onions, bushel	5	0 to 4
Brussels Sprouts, $\frac{1}{2}$ sieve ..	0	0 to 0	Parsley, dozen bunches ..	2	0 to 3
Cabbage, dozen	1	6 to 0	Parsnips, dozen	1	0 to 0
Capicums, per 100	0	0 to 0	Potatoes, per cwt.	4	0 to 5
Carrots, bunch	0	4 to 0	" Kidney, per cwt.	4	0 to 8
Caniflowers, dozen	2	0 to 4	Rhubarb, bundle	0	2 to 0
Celery, bundle	1	6 to 2	Salsify, bundle	1	0 to 1
Coleworts, doz. bunches ..	2	0 to 4	Scorzonera, bundle	1	6 to 0
Cucumbers, each	0	3 to 0	Shallots, per lb.	0	3 to 0
Endive, dozen	1	0 to 2	Spinach, bushel	3	0 to 4
Herbs, bunch	0	2 to 0	Tomatoes, per lb.	0	6 to 0
Leeks, bunch	0	3 to 4	Turnips, bunch	0	4 to 0

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2	0 to 6	Marguerites, 12 bunches ..	2	0 to 6
Asters (Fr.), per bunch ..	1	0 to 1	Mignonette, 12 bunches ..	2	0 to 4
Bouvardias, bunch	0	6 to 1	Myosotis or Forgetmenots ..	1	6 to 4
Cactus, dozen blooms ..	1	6 to 2	doz. bunches	1	6 to 4
Carnations, 12 blooms ..	1	0 to 2	Narciss (various)	0	0 to 0
" 12 bunches	3	0 to 6	Pansies, dozen bunches ..	1	0 to 3
Clove Carnations, 12 bunches	5	0 to 8	Pelargoniums, 12 trusses ..	0	6 to 1
Cornflower, doz. bunches ..	1	0 to 4	" scarlet, 12 bunches ..	2	0 to 5
Encharis, dozen	2	6 to 5	Paeonies, dozen blooms ..	0	0 to 0
Gardenias, 12 blooms ..	2	0 to 4	Pinks (various) 12 bunches	3	0 to 6
Gladioli, per bunch	0	6 to 1	Polyanthus, doz. bunches ..	0	0 to 0
Gladiolus <i>branchleyensis</i> , ..	1	0 to 1	Roses (indoor), dozen ..	0	6 to 1
dozen sprays	4	0 to 9	" Mixed, doz. bunches ..	3	0 to 6
Iris, dozen bunches	4	0 to 9	" Red, dozen bunches ..	4	0 to 9
Lilac, White (French), ..	0	0 to 0	" 12 blooms	0	6 to 1
per bunch	0	0 to 0	" Tea, white, dozen ..	1	0 to 3
Lilium anatum, 12 blms ..	2	0 to 4	" Yellow	2	0 to 6
Lilium candidum, 12 blms ..	0	6 to 1	Spiraea, dozen bunches ..	0	0 to 0
Lilium longiflorum, 12 ..	2	0 to 5	Stephanotis, doz. sprays ..	2	0 to 3
blooms	1	0 to 2	Stocks, dozen bunches ..	3	0 to 6
Lapageria, 12 blooms ..	1	0 to 2	Sweet Peas, doz. bunches ..	2	0 to 4
Maidenhair Fern, doz. ..	4	0 to 9	Sweet Sultan,	3	0 to 4
bunches	4	0 to 9	Tuberose, 12 blooms ..	0	6 to 1

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen	4	0 to 9
Arum Lilies, per dozen ..	0	0 to 0	Geraniums, Ivy, doz. ..	3	0 to 5
Arbor vitae (golden), dozen	12	0 to 24	Hydrangea, per dozen ..	9	0 to 18
Asters, 12 pots	0	0 to 0	Lobelia, per dozen	3	0 to 6
Begonias, various, per doz.	4	0 to 12	Marguerite Daisy, dozen ..	6	0 to 12
Balsams, per dozen	3	0 to 6	Mignonette, per dozen ..	3	0 to 6
Caladiums, per doz.	9	0 to 18	Musk, per dozen	2	0 to 4
Calceolarias, per dozen ..	4	0 to 8	Myrtles, dozen	6	0 to 12
Christmas Rose	0	0 to 0	Nasturtiums, per dozen ..	2	6 to 4
Cineraria, per dozen	0	0 to 0	Palms, in var., each ..	2	6 to 21
Cockscombs, per dozen ..	4	0 to 6	Pelargoniums, scarlet, 12	2	0 to 4
Dracaena terminalis, doz. ..	24	0 to 42	Pelargoniums, per dozen ..	4	0 to 9
Dracaena viridis, doz. ..	12	0 to 24	Rhodantha, per dozen ..	6	0 to 9
Erica Cavendishii, doz. ..	0	0 to 0	Saxifraga pyramidalis, ..	0	0 to 0
Euonymus, var., dozen ..	6	0 to 18	per dozen	0	0 to 0
Evergreens, in var., dozen	6	0 to 24	Spiraea, per dozen	0	0 to 0
Ferns, in variety, dozen ..	4	0 to 18	" palmata, per dozen ..	0	0 to 0
Ficus elastica, each	1	6 to 7	Stocks, per dozen	0	0 to 0
Foliage plants, var., each	2	0 to 10			



CORN HARVEST.

ALREADY are there indications of the speedy advent of general harvest work. Rye and early Peas are already in stack, the mowing of Talavera Wheat is begun, yellow Trefoil is mown, threshed, and samples of the seed are on the market; much white Clover has also been mown for seed, and winter Oats are fast approaching maturity; but this crop is a week or two later than usual owing to late sowing last autumn. All this work is to be regarded as preliminary, and is not taken into account with the general harvest work.

Turning to the bulk of corn crops, we have promise of a harvest of great abundance. A full corn plant of vigorous growth, full ears, with such plump grain as should tell well both in weight and measure. Calm bright weather while the corn was in flower went far to ensure full ears and plump grain; heavy rain has not been wanting to contribute its part to crop development; the fields are fast becoming "white for harvest," and a month or six weeks of fine weather now will enable us to save a corn crop alike good in quality and quantity. To take full advantage of such weather our preparations must be thorough and complete. No matter how sound reaping machines were after last harvest, it should never be forgotten that when machinery is in almost daily use for a month or two, bearings become worn, joints and connections loosened, to say nothing of the risk of breakage which such locomotive machines incur. If upon examination any blemish is found of a nature at all likely to cause a stoppage or breakdown in harvest it should be at once repaired. Whatever arrangement may be made with the workmen, it is the farmer's affair to do all that is possible to save the corn, and whether he uses self-binders or not, it is for him to help on with the cutting and carting as much as he can. It is unsafe to depend altogether on self-binders, for when corn is beaten down by storms the binder cannot be turned to full account. It is for this reason that we have so far kept to the old reaper and employed men to do the binding. Lodged or beaten-down corn is so often a penalty of high-farming that it has always to be taken into account. With machines in good order, rivets, points or fingers, sections, extra connecting rods, and any other parts specially liable to breakage, at least three sets of knives for each machine, files for sharpening, and plenty of oil, we are ready for the reaping. For clearing, carting, and stacking there must be due provision of forks, hand drag, and horse rakes, waggon ropes, stack, cart, and waggon ladders, straw for thatching, and litter or brushwood for stack bottoms. Cart and waggon wheels should be washed and greased, any faulty gateways, bridges, or crossings repaired, and hedges trimmed where they are at all likely to obstruct the corn waggons.

An extra rick cloth or two are always useful. We do not use the rick poles for corn stacks, but take care always to keep the middle of each stack well filled as the rick is built, both to impart stability, and to ensure rain water running off and not into the stack when a rick cloth has to be used. Stack-building is one of our difficulties. We try to have a handy man on each farm who does this, but the stack builders of our youth are not to be equalled, or even approached, now by any of them. The symmetrical circular stacks, swelling outwards with a gentle curve from bottom to eave, and perfectly erect, are almost a thing of the past. If now our rectangular stacks will only keep upright we are content, but we commend this matter to the especial attention of farm bailiffs, whose care it should be to have neat stack yards and symmetrical corn stacks, provided this can be managed without wasteful expenditure of time and labour.

In letting the harvest some take the horsekeepers into the harvest, others do not allow them to take part in binding or reaping by hand, but give extra pay, and keep them with the horses. This is a matter of expediency, and whatever is done see that the horses are not neglected, and that they have sufficient green food night and morning. With harvest in full swing there must be an odd man—generally too old to undertake a full harvest—to prepare such food for the horses, and to feed them in the morning. The green food used then is either second crop of Clover or mixed layer, or it may be Tares, Sainfoin, or Lucerne. Any of these will answer, so that the horses have full racks of it night and morning, and are not turned out to grass. After the long day's work of harvest enough food should be ready for the horse as we indicate, and it should not have to collect its own food on a pasture when it ought to be at rest. We allow some corn for horses in harvest, but it should be used with discretion, as horses may on some days pick up almost more corn than is good for them, and then green food is an excellent alternative. This is a matter which must not be left to the horse-keeper's judgment, for he will assuredly use corn if he can.

WORK ON THE HOME FARM.

On a heavy land farm more good work is being done between the hay and corn harvest by burning clay taken from the sides of fields and borders of ditches. Spread over the surface and ploughed in it opens up the soil to the action of the air, and also tends to promote quick and regular action of the drains. The heaps are set fire to when only a few cartloads are got together, but by the time they are burnt out they may contain from one to two hundred loads. Hedges are being trimmed so far as time permits, and the trimmings carted to the stacking and in readiness for the corn stacks. Ploughs and harrows have been kept going on foul fallows, and more Mustard and Coleseed has been sown for late feeding or ploughing in.

A large number of lambs are in folds upon Sainfoin, Rye Grass, and Oats. They will go later on to second crops of Clover, and then upon the stubbles. The Oats now being fed off are an inferior crop of spring Oats, so dwarf and thin that they are not worth putting in the harvest. The lambs eat them greedily, they manure the land, and ploughs will follow the folds closely. This field is a mile from the homestead, and we gladly sacrifice the Oats to enrich it sufficiently for sowing down with a green crop next spring. The sowing might perhaps be managed in autumn, but the result is uncertain, and time could hardly be spared for the work then.

An early crop of Peas has been harvested and stacked in good condition, and the land ploughed, so as to be available for late Turnips or a green crop. It is a good rule always to plough land immediately after the crop is cleared when possible, not of necessity to sow another crop at once, but rather to keep under weeds. Land infested with Charlock cannot be stirred too frequently provided it is left long enough between the ploughings for the weed seed to germinate. Stubbles should be left long enough for pigs and sheep to clear off the corn, but this need not take long if only a field is cleared at once, so as to make way for the ploughs to begin as soon as horses or steam power can be spared for the work, such autumn culture going far to ensure success another year.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1889. July.	Baromet- er at 32° Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
S unday	21	29.632	61.5	57.0	S.E.	60.2	68.0	57.4	111.3	53.0	0.864
M onday	22	29.899	60.2	52.2	W.	59.3	67.3	49.3	110.1	45.9	
T uesday	23	29.806	59.3	53.9	S.	59.0	65.8	48.7	113.2	48.2	0.533
W ednesday ..	24	29.836	58.1	54.3	N.	54.3	66.2	48.2	105.5	44.9	0.042
Th u rsday	25	29.583	61.2	55.6	W.	58.7	63.9	54.1	93.3	52.6	0.029
F riday	26	29.667	60.0	54.8	W.	58.8	68.2	53.3	117.5	50.9	0.054
S aturday	27	29.883	56.7	54.2	W.	59.1	66.1	54.4	93.2	50.9	0.193
		29.762	59.6	54.3		59.1	65.5	52.3	107.0	49.5	1.721

REMARKS.

21st.—Fair morning; showers from about noon and heavy rain, with some thunder and lightning from 6.20 to 3 P.M.; fine evening.

22nd.—Bright and fresh.

23rd.—Frequent showers all day and heavy rain, with thunder, lightning, and hail from 1.15 to 1.45 P.M.

24th.—Dull all day, with frequent spots of rain; showers at night.

25th.—Dull early; showery after 10 A.M.

26th.—Fine and generally bright throughout the day; heavy rain at 6 and 8 P.M.

27th.—Dull and showery during the morning; bright afternoon; and heavy rain with thunder and lightning 6.33 to 6.46 P.M.; 0.08 inch of rain fell in the three minutes between 6.33 and 6.36 P.M.

The temperature lower than in previous week, and slightly below average. Rainfall excessive.—G. J. SYMONS.



AUGUST WORK IN GARDENS.

AT all times of the year work presses to be done in gardens, and in many cases at no time more severely than during the present month. In not a few instances haymaking seriously interferes with the gardening routine, and much work that ought to have been done amongst flowers, fruit, and vegetables falls in arrear. It is only by extra efforts, where extra help is not afforded, that the arrears can be brought up without prejudice to future crops, before harvest. The ingathering of agricultural grain crops does not affect all gardens and gardeners—perhaps not half of them, as the greater number are situated in the proximity of towns; but there is a large and important margin in country districts where gardens are for a time considerably drained of the labour that is requisite for their maintenance, and for providing not only current but future necessities. No persons except those who have had experience on the subject can appreciate the inconvenience, and something more, arising from the withdrawal of men from gardens during the periods named—haytime and harvest. As a rule gardeners are most willing to afford help in any emergency outside the garden, and they often have to leave work which they know is important undone at the proper time, and the effects of which are not apparent to others till months afterwards, when a blank occurs in the supply, and the original cause is forgotten by all except the victim of circumstances at a critical time. It would be highly encouraging to many industrious, striving, willing men who, or their helpers, are drawn periodically from their regular duties, if a little extra assistance could be given them, when it is apparent they are overpressed, as compensation for the services applied elsewhere, and gardens would be rendered the more immediately enjoyable and ultimately productive by the timely assistance provided under the circumstances. A little extra labour accorded between haytime and harvest has been a boon to many, and there are many more who would rejoice by the consideration of a similar nature and look forward with pleasure to assisting in the ingathering of grain, which they otherwise anticipate with gloomy forebodings.

Gardens are particularly full of "work" this year. Vegetation both of a useful and useless nature has made, and is still making, rapid progress. Where lawns exist they can only be kept smooth by the more than ordinarily frequent action of machines or scythes. Where verges are extensive the shears must be in almost constant requisition to keep them neat and trim; and if not so kept they fail to give satisfaction. Walks and drives that cannot have timely attention become unsightly by weeds, and every day's work given to prevent this may save a week or more of after labour. It is the same with weeds in what is known as cultivated ground, though much that is embraced in that category has not the best claim to the designation. Weeds have gained the ascendancy through, in many instances, circumstances quite beyond the gardener's control, and it will be found true economy to clear them out promptly by a little extra outlay in labour. It may be, and probably is, true that in some cases a gardener may be to blame for the luxuriance of weeds. All men are not alike apt in seizing opportunities, when as much real work may be done in an hour as eventually may take days to accomplish. But by whatever cause gardens become a waste of weeds, it cannot be to the advantage of the owners of the land to permit them to continue.

The remains of exhausted vegetable crops of various kinds are occupying much ground uselessly, and worse, at the present time, for they are depriving the soil of its virtues for no purpose, and the effluvium arising from decaying vegetable is the reverse of conducive to pleasure, not to say health. Much of what is unsightly, and even offensive now, no doubt might have been prevented by pulling Cauliflowers and Lettuces instead of cutting them, and Cabbages also where not wanted for producing a second crop; and even in this case a different method of procedure some weeks ago in cutting and clearing away useless parts at the same time would have saved after labour, and prevented needless soil exhaustion and present unsightliness. But no matter what the cause of the present confusion and waste, the remedy consists in prompt action by a little extra labour, if that at disposal is not equal to the task. The ground thus liberated can now be turned to useful account, but much of it cannot, this season at least, if delay is permitted to occur. There is still time for planting such vegetables as Kale, Broccoli, and even Celery, for winter and spring use, but the time for doing so profitably will soon pass away.

August is the month in which Coleworts can be planted in the certainty that they will be of great service in due season, and a supply of plants should always be in readiness at this season for insertion in vacant ground. Some of the most important crops of the year must also be raised, such as Cabbages, also winter Onions, Spinach, Lettuce, and Cauliflowers; and the position of the man is not to be envied who fails in the supply of these home necessities.

Fruit trees on walls and open quarters need attention, and at no other period of the year can so much good be done by the judicious use of the knife in thinning out useless parts in order that those remaining may become fruitful. The remarks that have appeared in recent issues on the importance of relieving Peach trees of superfluous growths in summer apply, if not quite with equal force, yet to a very important extent to other kinds of trees. The unfruitful nature of many is due to inaction in summer, and the fact is, perhaps, not sufficiently recognised that no kind or amount of work in winter can in any appreciable degree compensate for summer negligence.

Amongst flowers, too, work presses to be done. Those fading require dressing or removal, those advancing require support and attention. A stormy day may destroy the work of a season if that which is necessary for preventing the injury is not provided. Persons who desire the earliest and best displays of hardy annuals, especially such as *Limnanthes*, *Silenes*, *Saponaria*, and others of a hardy nature, cannot produce them so well in any other way as by sowing thinly in firm soil and an open situation during the present month. The propagating season is also with us, and delay in this department may be followed by disaster. Days or weeks cannot be lost at this period of the year without grave inconveniences resulting, and every effort should be made by masters and men to have garden work in August completed well up to time, or it is not possible that the greatest satisfaction can be realised, not only during the present season, but throughout another year.—*EXPERIENTIA DOCET.*

LILIUM HARRISI.

A LATE assistant located in the United States of America brought to my notice the superiority of this variety over the old *L. longiflorum* for pot culture and forcing. When it was first introduced to the public in this country I secured bulbs to give it a trial, but my experience was not very agreeable, in fact I was disappointed, and I was not alone in viewing this variety with suspicion. Now, however, it has exceeded my expectation, and the old *L. longiflorum* cannot be compared to it for pot culture, either for profusion of flowering or for early forcing. Good bulbs, 7 to 9 inches in circumference, can now be obtained at less than double

the cost of *L. longiflorum*, and I can assure those who still have doubts that it is decidedly the cheaper of the two.

It will be clearly seen which of the two is best adapted for early forcing, when it is known that *L. Harrisi* is imported in time to be potted during August, thus having two months good start of *L. longiflorum*. The old form is principally grown and imported from Holland, and cannot be obtained before the end of October. *L. Harrisi* is readily distinguished by its bulbs from *L. longiflorum*, so that there need be no mistakes, as was the case when *L. Harrisi* was first introduced. The bulbs of the latter are flatter than those of *L. longiflorum*, which taper gradually almost to a point. Even the scales of the two are distinct as well as the colour. Imported bulbs of *L. Harrisi* are yellow, very yellow in comparison to those of the old form. The foliage when grown is slightly longer, narrower, and of the two has the least substance. *L. Harrisi* grows considerably taller and produces more flowers on each spike—that is, strong flowering bulbs. The tube of the flower is longer, and the flower possesses a pearly whiteness that distinguishes it from *L. longiflorum*.

The bulbs of *L. Harrisi* are sold by size—namely, 5 to 7 and 7 to 9 inches in circumference. There is a smaller size, but the largest are decidedly the cheapest for forcing in pots. Those who order early always secure the best bulbs, and, therefore, intending cultivators would do well to order what they require at once. This is not only the case with *Liliums* but with all bulbs; the first consignments I have found are always the best. This is not all, the bulbs are much better placed in the soil directly they arrive, and do better than those that are kept out for some time. Those who pot the bulbs early have a decided advantage over those who delay until the autumn has advanced. The one can give them almost natural treatment from the first, and the other resorts to artificial aid and often undue forcing.

The bulbs after arrival should be carefully cleaned. If they have been packed in sawdust, which is frequently the case, it must be carefully shaken out, and all damaged scales removed. It is not necessary to pull away the whole scale if only a portion is injured, the decayed piece can be removed with a knife. The size of pot to be used depends entirely upon circumstances. If the plants are needed for effect in groups the bulbs can be potted singly in 4½-inch pots; two may be placed in 6-inch pots, four in 7-inch pots, and so on. For cutting, or where good sized pots can be used for furnishing, 8 and 9-inch pots may be employed, placing five bulbs in the former and six in the latter. They can be well grown in the smaller pots, but so far, we believe, better in the larger, because a less frequent use of the water pot is required in the early stages of growth. The pots, whichever size is used, must be liberally drained. Press the soil moderately firm, and place the bulbs 2 inches below the surface. The compost may consist of good fibry loam, moderately light, two parts, and the remaining two parts of leaf mould, sand, and decayed manure—one-seventh of the latter will be ample. A little sand may with advantage be laid at the base of each bulb, and the soil should be in an intermediate state for moisture. This is important—it must not be too wet or, on the other hand, too dry to necessitate watering before the commencement of root activity and growth. If the loam is heavy make it light by the addition of more sand, charcoal, or any material that will keep it porous.

The pots containing the bulbs should be placed in a cold frame, and covered over the rims with cocoa-nut fibre refuse, sand or finely sifted ashes; the first, where it can be obtained, is perhaps the best. Mats should be secured over the frame, which should be closed until growth through the fibre is visible. By the aid of mats and fibre the soil about the bulbs remains sufficiently moist to start them into root activity and growth, without having to water them, which would be the case if the pots were simply stood in the frame. Full light must be admitted directly signs of growth through the fibre can be detected. Admit air gradually at first, and increase it considerably as growth advances until abundance can be given on fine days. The plants should be syringed and the frame closed early in the afternoon so as to enclose a little sun heat. It is surprising how rapidly they advance in growth. The fibre can be removed when the growths are 2 inches high, or it can be left on until the pots are removed from the frame.

When the plants have once started into growth care must be taken that they are not checked. Directly it commences to be cold at night remove them to a light airy structure where the temperature will not fall below 55° to 60° at night. On fine days give abundance of air to insure sturdy growth. This is important during the sunless days of autumn and winter. If pushed forward rapidly in a close confined atmosphere they are certain to flower unsatisfactorily. They must be kept growing, but slowly, and then their flowers will form and come forward even if they are brought on a little more quickly. They will bear forcing gently after the buds are formed and display signs of lengthening out.

They must be watered in all stages of growth with the utmost care. If the pots are plunged when the bulbs are first potted it is questionable if any water will be needed before they have made 2 or 3 inches of growth. They should be examined occasionally to see that the soil is not likely to become dry.

Start *Liliums* in the pots in which they are to flower. Nothing is gained by placing them in small pots and shifting them into a larger size afterwards. It is also unwise to only half fill the pots with soil at first; treat them the same as is done when potting any ordinary plant or bulb. This variety certainly roots profusely from the stem, but we have discovered no advantage by the use of rich top-dressings. After the flowers appear liquid manure in a weak state may be given with advantage.

Aphis is the greatest enemy this *Lily* has to contend against. It will quickly cripple the flowers and destroy the plant if not eradicated as it appears. Slight fumigations with tobacco smoke is the best means of destroying the insects, but this must be done directly they can be observed. If they are left for some time they quickly establish themselves in the lead of the plant, and are practically safe from the effects of the smoke. Once they get into this position smoking is useless. The points of the plants should be dipped in a weak solution of tobacco water. The plants will bear this, but the fly cannot.—W. D. L.

THE PAST STRAWBERRY SEASON.

To obtain an estimate of the qualities of the many varieties of Strawberries an extensive plot of ground was planted with about thirty varieties in alternate rows in August and September of last year. We were thus able to compare the varieties with each other, and their behaviour during the season. The first fruit to ripen, on a south border, was *Black Prince*, on June 13th, followed immediately by *Laxton's King* of the *Earlies*, *Vicomtesse H. de Thury*, and *Laxton's Noble*, in the order named, all maiden plants, planted the August previous, mixed indiscriminately for comparing dates of ripening. Then followed *L. Grosse Sucrée*, *Keens' Seedling*, and *Sir Jos. Paxton*, out in the open. June 23rd brought us *President*, *Marguerite*, *James Veitch*, *Pauline* (very inferior), *Sir Harry*, *Captain*, *Alice Maud*, and a score others. The late varieties, *Filbert Pine*, *Eleanor*, *Elton Pine*, and *Wizard of the North*, on the south border, were fifteen days behind *Black Prince*, whilst in open quarters they ripened on July 6th, being twenty-three days after the first berries were gathered. At the present time (end of July) the crop is virtually over, excepting a few small berries on the latest varieties.

One remarkable feature of the year was the absence of May frosts to destroy the "King" or first blossoms, and accordingly *Laxton's Noble* came out prominently with some remarkably handsome fruit which, had there been frost, would never have reached maturity. By the way, what a magnificent quick swelling berry *Noble* produces, yet probably to the detriment of its quality and texture, which can only be described as second class, soft and woolly. It is of handsome shape and good colour, and ripens regularly and speedily.

The drought of June spoilt what promised to be an abundant crop of fruit, and much of it remained small and useless for market work, notwithstanding that the earliest blossoms set fine berries. The rainfall of the month only amounted to 0.54 inch here, and to this deficiency much of the evil is traceable. The varieties that best withstood the drought were *Vicomtesse H. de Thury*, *Keens' Seedling*, *Marguerite*, *James Veitch* and *Dr. Hogg*. Those badly attacked with red spider, consequent on the dry weather, were *British Queen*, *Sir Joseph Paxton*, *Old Pine*, *Filbert Pine*, and *Elton Pine*. Others were also sadly injured.

The largest fruits during the season were obtained from *Sir Joseph Paxton*, and weighed 1½ oz. *Jas. Veitch* had also berries weighing 1½ oz.; *Marguerite*, *Noble*, *Excelsior*, and *Waterloo* each had fruits of 1¼ oz., whilst *Vicomtesse H. de Thury*, *Loxford Hall Seedling*, and several others had berries of 1 oz. each. If it had not been for the drought these weights would have most certainly been exceeded.

Comparing the past season with the previous one of 1888, in which year *Black Prince* was first to ripen on June 25th, just twelve days later, and *Keens' Seedling*, *James Veitch* and others not until July 12th, the late ones coming in on the 31st, and still in fruit on August 15th, we find the season considerably earlier, and on the whole may be taken as more satisfactory, the quality of the berries from *Vicomtesse H. de Thury*, *British Queen*, *Dr. Hogg*, *Sir Joseph Paxton*, *Old Pine*, *Filbert Pine*, and *Waterloo* being far superior to that of 1888.

Just a word in regard to the after treatment of plants. The old custom of cutting off all the leaves as soon as the fruit was all gathered may have much to recommend it when the leaves are

badly infested with spider, as by such means a wholesale clearance of the pest may be effected, and a brisk renewal of healthy growth may make amends for lost time. There is no question, however, where a strong healthy leaf is found, whether this treatment is beneficial or not, as the robust growths of the leaf, always too valuable to lose, are of paramount importance in the production of a mature crown, ready for developing a full crop the following year.—A NORTHERN GROWER.

JOTTINGS.

In the Royal Horticultural Society's Garden at Chiswick several trials of flowers and vegetables have been undertaken this year, and the members of the Floral Committee have paid two or three visits to inspect and analyse these, the results to be embodied in a report to appear in one of the Society's journals. Most unfortunately the funds at command do not apparently permit the prompt publication of these and other matters of interest to the Fellows, who consequently have to wait patiently until the long-looked-for journal arrives, or some individual member gives an outline of what has been done.

IVIES.

One of the meetings dealt with the Ivies, of which a large representative collection has been grown this year, and Mr. Shirley Hibberd, who has long made the Ivy one of his favourite specialties, is now publishing a very useful catalogue of the garden varieties, constituting a really valuable supplement to his admirable monograph issued some years since. The beauty of the numerous varieties of Ivy is not fully appreciated in gardens generally, because comparatively few are widely known; yet many additions to those grown might well be made, especially for garden walls and any bare spaces that cannot be more profitably covered. There are plenty of situations where Ivies thrive capitally, but where it would be useless, or quite unsuitable, to attempt growing fruit trees, and it is dark shaded walls, &c., that are most in need of some covering. All can appreciate the picturesque beauty of any old or stately castellated building covered with Ivy, and I shall not readily forget the effect produced by the noble Ivy-mantled towers of Warwick Castle when seen on a brilliant moonlight night; but even the dull monotony of town and suburban houses or villas can be greatly relieved by a judicious employment of well selected Ivies on the walls. It is true that the common and Veitchian Virginian Creepers are now so extensively planted by reason of their quick growth, that few have the patience to wait while the Ivy is making its much slower progress. Where, however, the greater portion of a house front is devoted to the neat *Ampelopsis Veitchi*, space can always be found at the base for a few of the smaller Ivies, and a pleasing appearance they have, needing but little attention, and of course possessing the one great recommendation of being evergreen.

IVIES FOR SCREENS.—In pots, boxes, and tubs for moveable screens the smaller Ivies are more valued now than formerly, and in many establishments they are almost indispensable for this purpose. At Syon House quite a collection is grown in this manner on screens as diverse in shape as possible, fitting them for a variety of situations in the rooms. For the larger screens, and where a dense effectual block is required, the bold broad-leaved varieties are suitable, and the space is covered quickly, but the small-leaved varieties have the best appearance on a moderate sized screen. The variegated Ivies are also adapted for this method of growing, but they are rather more difficult to colour and manage successfully. The forms of *marginata* are fitted for the purpose, such as *marginata major grandis* and *aurea*, with *chrysophylla*, *discolor*, *sulphurea*, and *madeirensis*, the last named being one of the most beautiful variegated Ivies in cultivation, but somewhat delicate. Of the green forms *gracilis*, *pedata*, *minima*, *deltoidea*, and *triloba* are amongst the best for screens.

ANNUALS FOR TOWNS.

Another interesting and important "trial" at Chiswick was the testing of a large number of annuals in the southern part of the garden, near the Strawberry ground. A considerable space was devoted to them, but they required much more room to have done them full justice, as nothing spoils the effect of these plants so soon as being crowded in the beds. Some of the dwarf growing kinds require massing to produce a good appearance, and when the flowers are small much of their beauty is lost if the plants are not seen in substantial beds; still crowding can always be avoided, and a good deal of seed is wasted by excessive liberality in sowing, the results being less satisfactory alike to purchaser and vendor than when a little more economy is practised. When the seed is sown in pans under glass, as in the case of half-hardy annuals, the transplanting if properly done will avoid all danger of crowding, also in

the case of those sown in beds out of doors, and placed in other positions subsequently. Those, however, sown where they are to remain require to be either allowed sufficient space at first or carefully thinned afterwards. Perhaps it might be questioned whether a trial of annuals at Chiswick could give a reliable indication as to what sorts are best adapted for culture in towns, and all that the Committee could do in the matter was to give one, two, or three marks to the respective varieties, according to their effectiveness and generally known usefulness. The fact is, there are few annuals that cannot be grown during the summer months in town gardens where the smoke and dust are not too abundant, provided the plants be raised elsewhere and transplanted, or at least spring sown. On the other hand, there are few adapted for sowing in the autumn for early spring flowering, although in gardens more favourably situated these give the best results. It is a waste of time and labour to attempt raising plants in the autumn, which have to pass through the trials of a winter in a smoky foggy city like London before they have a chance of flowering, as if they survive they will be miserable weaklings, incapable of giving any satisfactory return for the attention they have received. To supply the townsfolk with plants for their gardens in spring there are numberless growers round the metropolis who furnish the hawkers with stout seedlings in boxes, which are sold at a very moderate rate in the poorer districts of the metropolis. In Covent Garden and other markets large quantities of annuals and other bedding plants are also sold in a similarly small state, the florists and seedsmen providing supplies as well, so that many millions must be disposed of during the spring months.

In suburban gardens outside the smoke radius, or situated in the south and westerly districts, matters are quite different, and there is little difficulty in raising plants, both by autumn and spring sowing, so that a prolonged season is secured. Even in them the collection of annuals is commonly much too restricted, and a few sorts are planted almost exclusively, numbers of really handsome annuals quite as easily managed being unknown. Some time ago one of the leading firms of seedsmen called attention to these plants by a series of exhibits at the Regent's Park Botanic Gardens, but annuals in pots require considerable care to bring them into good condition, and close attention afterwards to retain their beauty even for a short time, and there is only a relatively small number well fitted for pot culture. The exhibits in question were, however, instructive, and many visitors made the acquaintance of charming bright-flowered plants hitherto unknown to them. In the London parks also in recent years some of the useful qualities of the plants have been illustrated by their employment in the mixed beds now in favour; but no trial of the nature of that at Chiswick has been undertaken except in the extensive seed grounds of such firms as Messrs. Sutton, Carter, Veitch, and Webb, at Reading, St. Osyth, Langley, and Kinver, and these have been beyond the reach of the majority of metropolitan visitors. Still few can imagine the attractions of annuals when seen in broad beds of an acre or more, and a hillside or extensive slope of ground mapped out in grand masses of colour has a most imposing effect, reminding one of our heaths and northern hills, golden with Furze or rich with the purple Heather. Flowers in vast expanses like this have a fine appearance, and one can imagine the beauties of some districts in California, where at certain seasons the fugitive attractions of so many annuals and similar plants are displayed in the richest and most diverse profusion. The majority of amateurs can only attempt but a very modest imitation of Nature's extravagance in the floral charms of favoured regions, but many a garden can be rendered gay for several months by a moderate expenditure in seeds of annuals.

POPPIES.

The first plants in the trial grounds at Chiswick which received the attention of the Committee were the Poppies that had been brilliant for some days and were then getting somewhat past their best. This character—i.e., fugaciousness—is the chief defect of the family, and deters many from undertaking their culture; yet brilliant beds of these plants can be added to any garden, and if they do not last very long they are but little trouble, and the plants repay for such slight attention as they require by flowering abundantly. The first group was that devoted to the *Papaver Rhæas* type, all of moderate height, hardy, free, bright, and varied. The wild Poppy of our corn fields is familiar to all, but only within recent years has its capacity for improvement under cultivation been fully recognised. The production of the Shirley Poppies and others of a similar strain was a great advance, and the Rev. W. Wilks performed a good service when he raised and popularised these beautiful varieties. The origin of these Poppies has been repeatedly noticed as due to the crossing of *Papaver Rhæas* and *P. Hookeri*. The latter is, however, simply a geographical variety of the former, if even it be entitled to as much

distinctness, for some urge with good reason that seeds of our common Poppy were probably transported long since to India amongst other seeds, and the differences now observable are due to climatal influence.

Mr. J. G. Baker, however, regarded the Indian plant as distinct and named it *Papaver Hookeri* after its discoverer. The plant was figured in the *Botanical Magazine* December 1st, 1883, and Sir Joseph Hooker thus describes it. "The plant here figured has puzzled me very much. I found it to be common in gardens in India, both native and European, but I know of no native locality for it. Supposing it to have been some well known garden species, and introduced from Europe or elsewhere, no notice was taken of it in the 'Flora Indica' or in the 'Flora of British India.' Specimens are in the Kew Herbarium, collected in the Sahrumpore Gardens by Thomson, in those of Scinde by Stocks, and by myself in those of Bengal. Its nearest ally is obviously *P. Rhæas*, from which it differs in its great size, for it forms a bushy herb 4 feet high and upwards, and in the great number of its stigmatic rays, which are twelve to twenty, that is nearly double those of *P. Rhæas*; the flowers, capsule and seeds are also much larger and the stigma broader in proportion. The flowers attain 3½ inches in diameter and the capsule three-quarters of an inch. The petals vary from pale rose to bright crimson with a white or black spot at the base."

Whether it be regarded as a species, or as a large cultivated form of *P. Rhæas*, this is a most valuable addition to our gardens, being perfectly hardy, and single plants flowering continuously in autumn for several weeks. It was raised from seeds sent by Mr. J. Beck of Kashmir (formerly of Kew) and which were collected by Mr. Dalglish during a journey from Kashmir to Yarkand in Central Asia."

At Kew during the past two seasons a large bed has been devoted to the seedlings of *P. Hookeri*, the seed having been received direct from India, and it has been interesting to note the range of variation both in size and colours. This year a neighbouring bed has been occupied with "Shirley Poppies," and with many points of strong resemblance some differences were also clearly perceptible. For instance, the *Hookeri* varieties had shorter, more globular, smooth capsules, and a less glaucous appearance than the Shirley Poppies, in which the capsule was rather elongated and more narrow, the plants rather stronger, and the glaucousness of stems, leaves, and capsules much more marked. The flowers, too, were rather larger, and light bright shades of colour more abundant. But at Chiswick it was seen that the Shirley Poppies are variable and require some care to maintain their character, as two small beds of seedlings from different sources were very different in merit, one series being much superior to the others. They are all, however, beautiful, and the Committee ranked them with the best of the annuals by giving them three marks.—L. CASTLE.



CELOGYNE CRISTATA.

PLANTS that have been induced to make their growth and flower before the general stock will by this time have well developed pseudo-bulbs, and must be removed from heat to a cooler house. This must be done gradually, and then remove them to the cool house a few weeks hence. When the pseudo-bulbs are developed early in the season considerable care is necessary to prevent their starting into second growth, which they are liable to do, instead of producing their flower spikes. If the plants start a second growth there is little prospect of flowers unless the growths are sacrificed. This is not wise, and the best course is to assist the plants to complete their second growth. If the autumn proves fine, and the pseudo-bulbs are well ripened, a good supply of flowers may follow. After a weak second growth the plants are a season or two, unless they break back, before they make the strong pseudo-bulbs that they previously possessed. The general stock should be syringed freely and watered liberally, but not be hurried in a close, highly heated structure. This treatment results in the pseudo-bulbs forming prematurely and being half the size only that they would attain if brought forward under cooler and more airy treatment.

THUNIA MARSHALLI.

Expose these plants fully to the sun in a cool house to thoroughly harden and ripen their growth. The pseudo-bulbs of plants that are only half ripened are almost certain to decay during the resting

period. Well-ripened growth, a season of complete rest, and then if growth is made under conditions that will insure sturdiness flowers will be certain to come. Water the plants with care; do not allow them to suffer by an insufficient supply until the foliage commences to die naturally.

CYPRIPEDIUM INSIGNE.

Plants that were assisted to make their growth in vinerias, Peach houses, or a warm pit should have lighter, cooler, and more airy treatment. If kept in heat any longer they will come into flower too early to be of real service. They are much more useful for the conservatory, in fact any form of decoration, after November than before. When kept in heat too long the plants are very liable to throw up their flowers irregularly and prematurely. Such cool species as *C. villosum*, *C. verustum*, and others may remain in warm quarters for some time longer; their growth is far from complete. All *Cypripediums* should have abundance of water; in fact, they must not approach dryness during active growth. The syringe may be used freely, provided the water is of the same temperature as the structure in which they are grown. Strong-growing species, such as *insigne* and *villosum*, are benefited by occasional applications of liquid manure in a weak clear state after the pots are full of roots.

MOSS ON THE SURFACE OF ORCHID POTS.

In the cool house the moss on the surface of the pots will be growing luxuriantly. It is useless to keep pressing it down, for it is no sooner done than it needs attention again. Clip it off with a pair of small shears, use it for top-dressing plants that have been potted more recently, or making good the surface of those on which it has not grown so freely. When the best form of sphagnum only is used it does not give much trouble to keep it in order. Unfortunately this is very difficult to obtain. The long, thin, loose variety grows too rapidly and decays too quickly, therefore proving an evil instead of an advantage to the plants.—ORCHID GROWER.

ALLOTMENT GARDENS AT NOTTINGHAM.

THE importance of allotment gardens, and their bearing upon the social well-being of the working classes in encouraging habits of industry, steadiness, and thrift, was seen in a remarkable manner at the Exhibition of the Nottingham (St. Ann's) Amateur Floral and Horticultural Societies, held last week. Large numbers of prizes were offered for the productions from these allotment gardens, and though Nottingham has been famous in the past for the high merit of the artisans' productions, they on this occasion seem to surpass everything that had gone before, and the display was wonderfully good, with few exceptions. It is not my intention to trouble you with any particular details of the Show itself, preferring to give you a brief account of these allotment gardens which I was invited to visit, being assured that the Roses alone, to be seen in what is known as the Hunger Hill Gardens, were well worth being seen. These allotments are owned by the Corporation of Nottingham, and number about 1600; the allotments average from 300 to 500 square yards, and are let at a small yearly rental. But in addition to these there are vast tracts of land, which have recently been divided into allotments, so that in the eastern division of the borough alone there are something like 5000 allotments, all of which are situated in the centre of a district which has long been famous for the successful cultivation of the Rose. My visit afforded me an opportunity of seeing the Nottingham gardens in their prime—or in other words, under the most favourable circumstances, and we could not help feeling that the inducements which they held out for healthy recreation were of the greatest importance. The first we inspected was that of a working mechanic, whom my guide addressed as "Charley," "Honest Charley," a man who had walked between 8000 and 9000 miles between his garden and his house, and who could not tell which had done him the more good—the walk to and from his garden, or the actual gardening in which he exerted himself. He possesses one of the larger sized allotments, about 500 yards, which is wholly devoted to Roses and Tulips, the former of which were very beautiful. A. K. Williams I have never seen in finer form. It has been well shown in this neighbourhood this season, and it is quite evident that those who found it shy and unsatisfactory at first are overcoming the difficulties of its culture. In this garden, as well as most other gardens we visited, Camille Bernardin, Captain Christy, and Charles Lefebvre were in excellent form. A great favourite amongst the artisans of Nottingham is La France, which I found extensively and well grown in the majority of the gardens. Marie Baumann, as a richly coloured variety, was in excellent form, as was also Horace Vernet, Marie-Rady, M. Noman, Merveille de Lyon, Beauty of Waltham, and Marguerite de St. Amand. "Honest Charlie" speaks very highly

of Heinrich Schultheis, and judging by the splendid examples we saw in his garden it possesses qualities that will commend it to Rose growers. This grower prides himself upon having exhibited and taken honours at many leading shows, as well as having supplied from his garden flowers which have graced the hand of the Princess of Wales upon her visit to the town some years ago. In addition to a good collection of Hybrid Perpetuals a snug corner is devoted to Teas, amongst which we noticed fairly good examples of Madame Bravy and Madame Willermoz. "Charlie" has held and carefully tended his allotment for more than twenty years, and well can he unite with the poet in saying—

"We have lived and loved together
Through many a changing year."

Another garden worthy of mention which we next visited was that tenanted by a working bricklayer, who, by-the-by, is ably assisted in its management by his labourer. Roses again were, like the preceding garden, the principal feature, and truly grand examples they were. Several fine blooms of Her Majesty attracted my attention, and in discussing the merits of the Rose with the owner he made a very hearty response to my question, "How do you like it?" by saying "God bless her." A. K. Williams, Alfred Colomb, Etienne Levet, Abel Carrière, and Marie Finger are especial favourites with this knight of the trowel. He grows about 150 trees in seventy varieties, all of which are dwarfs upon their own roots. Roses are not alone in this garden, for there are flats of Stocks, Asters, Phlox, Mignonette, as well as Peas, Beans, Potatoes, Celery, and other vegetables, bush fruits, &c., all of which are in good condition, and which must materially add to the owner's income, and turning what might be happy and comfortable homes already into still more happy and comfortable homes. There are other benefits to be derived in the direction of the elevation of taste and the development of character, and the working classes have got into force a system which will enable them to acquire land of their own, which will increase the means of support of their families.

We have given a brief description of two of these allotment gardens, but there are hundreds, if not thousands more, equally well cultivated within the borough of Nottingham. It is indeed a sight not soon to be forgotten to traverse the miles of narrow avenues of closely clipped hedges, and from some elevated spot view the acres of Roses, for at the time of our visit all Rosedom was out in holiday apparel—white, pink, scarlet, crimson, and yellow, striped and mottled, double and single, in clusters and solitary, Moss Roses, Damask Roses, Noisette, Perpetual, Bourbon, China, Tea, Musk, and all others in exuberant beauty. The air was full of their fragrance. The eye can turn nowhere that is not attracted to glowing masses of Roses. At first one is exhilarated. We wander from garden to garden, and each owner will display his liberality by cutting you his finest specimen. Mr. Arnold Morley, M.P. (who paid a visit to the gardens last week) dons a Souvenir de la Malmaison, whilst the Hon. Finch Hatton preferred a Gloire de Dijon. The air and soil that once nourished Nettles and Thistles, Plantains and Docks, now bring forth Roses with equal kindness, and it was indeed a happy thought when the Nottingham Corporation transformed this large acreage of waste land into allotment gardens; for floral insanity is one of the most charming afflictions to which man is heir. One never wishes to be cured, nor should anyone wish to cure him. We find after the strife, and heat, and toil of our ambitious life, that there is more pure satisfaction in the garden than in all the other pursuits that promise so much of pleasure and yield so little.—J. H. WALKER.

DISEASE OF LILIES.

THIS disease has been known for about twenty years, although it is only during the last ten years that special attention has been directed to it. There are few gardeners or owners of gardens now to whom the disease is not perfectly familiar. Affected plants rapidly and completely perish from the top downwards with a kind of a very wet rot. The white garden Lily (*Lilium candidum*) is most commonly affected, but it is probable that all garden Lilies are liable to attack. *Lilium speciosum* (lancifolium) is frequently destroyed, as are *L. superbum*, *L. calcedonicum*, *L. pardalinum*, and other Lilies. Tulips are affected by an identical disease, so are Humea and Scrophularia. During the first ten years of the known attack of this disease upon Lilies, no fungus or other cause of the disease could be detected; indeed it may be safely said that no fungus capable of causing the disease was present, for the diseased material was constantly under the observation of the late Mr. Berkeley the late Mr. Broome, the writer of this notice, and other observers. Mr. Berkeley was especially anxious to detect some fungus, and once mentioned in print that *Asteroma polygonati* was the possible

cause. In 1881 Mr. Berkeley, however, did detect a fungus upon dying Lilies forwarded to him by Mr. C. Wolley Dod, but even at this time the fungus was so rare that on future examples being forwarded to the writer by Mr. Dod no fungus could be seen, and Mr. Berkeley's examples (now at Kew) had to be re-examined so that the fungus might be studied.

During the last ten years the fungus upon the decayed parts of dying Lilies has been more frequently seen. It is really a very old and well known species, the *Polyactis cana* of Berkeley, and in still older times known as *Botrytis cana*. Mr. Berkeley seems to have been misled by the condition in which he saw the fungus on Mr. Dod's Lilies, for he described it as a new species under the name of *Ovularia elliptica*. The present writer was also misled, for he described it as new under the name of *Peronospora elliptica*. Professor Marshall Ward has described it as a *Botrytis*, evidently new to him, as he has given no specific name. An examination of original examples of *Polyactis cana*, however, shows the fungus of Lilies to really belong to that species.

A reference to the accompanying illustration will show some of the different forms of this fungus, which is transparent, or faintly greyish-white in colour. The figures at A, B, C, and D might well be taken for a species of *Ovularia*. Mr. Berkeley had these forms only in view in 1881. The central slender figure greatly resembles

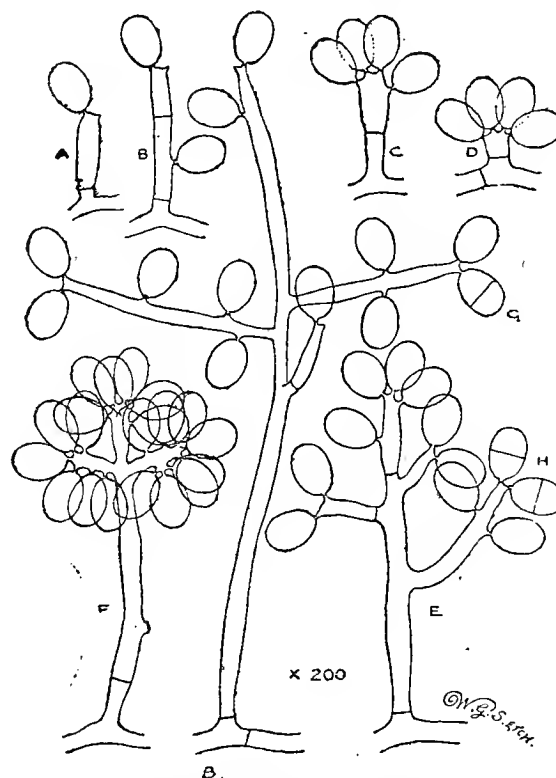


FIG. 13.—DISEASE OF LILIES.

Its accompanying fungus, *Polyactis cana*, enlarged 200 diameters.

a *Peronospora*, so does the right hand figure. The left hand bottom illustration resembles *Polyactis*, and is typical. The spores seen at G and H are contrary to all the fungi mentioned, and might well belong to *Diplosporium*, in fact some of the examples have been referred to this genus. The above remarks show what uncertainty has prevailed as to the name and nature of the fungus sometimes seen on dying plants.

It may even yet be considered open to doubt as to whether this *Polyactis cana* is really the cause of the disease or a mere occasional accompaniment. Prof. Ward, in a series of laboratory experiments, thinks he has proved the fungus to be the cause of the disease, but this gentleman was unaware of the widespread nature of the disease for ten years before any fungus could be detected. In the original examples at Kew the fungus is only to be seen growing on spots already decayed as is usual with *Polyactis*, and this summer I have seen a second species—viz., *Polyactis vulgaris*, growing upon diseased Lilies in place of *P. cana*, and as far as I know no one has yet suspected *P. vulgaris* of being able to cause disease. *Polyactis vulgaris* is illustrated in the *Journal of Horticulture* for June 28th, 1888, to the same scale as *P. cana* here given; a reference to this back number will show the difference in the size of the spores of the two fungi. *P. vulgaris* is there given as growing upon Tulips affected with a putrescent disease not unlike in effect that of Lilies. Sometimes little black grains, like grains of gunpowder, are found on plants where the different species of *Polyactis* grow, and Prof. Ward has seen them on Lilies, although I have not. Mr. Berkeley recorded the presence of these

rains more than fifty years ago in the "British Flora." Mr. Berkeley saw species of *Polyactis* growing from the grains, the grains themselves being in fact little compacted masses of fungus, spawn, or mycelium.

The effect upon the host plant in the disease of Lilies, Tulips, Humeas, &c., is very like that seen in the "wet rot" of Potatoes. This "wet rot" in Potatoes appears to be caused by a virulent rapid growing micro-fungus named *Bacillus Amylobacter*, which is capable of killing by a powerful ferment.

At the present time it may be open to doubt whether *Polyactis* is really capable of producing disease of any kind in plants, notwithstanding the laboratory experiments of Prof. Ward, especially when the fact is borne in mind that all the bad effects of the disease were well known before any fungus was seen at all.

Some of the practical readers of the *Journal of Horticulture* may justly consider this notice very unpractical, useless, and indefinite; if so they must remember that I can only write of what I know or have seen. I am in a state of uncertainty as to the nature of the disease of Lilies, and I doubt whether any true explanation has yet been given. Remedy there is none, and if the disease is caused by a parasite, it must be borne in mind that parasites prefer to attack the healthiest plants. Parasites do not attack the feeble and dying, but the most robust; they are nourished by the best, not the worst juices of plants. Other forms of wet rot in plants are known to be highly infectious, therefore if any of the putrid remains of diseased Lilies are allowed to remain undestroyed in gardens they will probably spread the disease.—WORTHINGTON C. SMITH, *Dunstable*.

CANKER IN FRUIT TREES—THE INSECT THEORY.

MR. HIAM (page 85) says he is tired of writing on this subject, but when he thought he saw an opportunity of making a point he forgot his fatigue. Agreeably as your correspondent writes, he does not explain how wounds, which he alleges are caused by insects, can at the same time heal with the insects still as busy as ever in their destructive work; nor does he attempt a reply to my question as to where the millions of insects can have gone, which, according to the theory in question, caused the canker in Mr. Tonks' garden. Assuming, for the purpose of argument, they did cause it, which I am unable to admit, how is it that they departed just when he improved and fortified the soil? It would almost seem as if the pest that is said to eat holes in the branches does not like good soil at the roots. He (I mean the insect) must be a funny little fellow, and if ever I get hold of him he shall have the best place if I know it on the best tree I can find.

Mr. Hiam does not attempt to explain how it is that so many trees have been cured of canker without the applications of insecticides. Some are made to produce clean and healthy growth by the action of fresh soil; others by grafting, which stimulates root activity.

When the author of the insect theory is obliged, as he says, to give up the idea that his insects only attack certain sorts they like best he really demolishes his own case, and evidently to his own dissatisfaction.

All we are told fresh about the mysterious insects is that they "do not fly." Probably not; and it is very certain they must be slow walkers or they would step from one tree to another close by; and how they managed to reach the solitary branch cut (and figured) from the Impney tree with no other cankered parts near is a problem still to be solved. If they walked all the way they must have been like their patron, very "tired" indeed.

Mr. Hiam does not admit that frost can injure fruit trees in England because they endure its greater intensity in canker; but we have not the brilliant summers here that harden the wood in Canada and the United States; but even there, if a grower of fruit of many years' standing is not in error the damage sustained by frost is often very serious. Be that as it may, a severe winter has never followed a dull summer in England without cankered branches following, some varieties of Apples, being more tender than others, suffering the more severely. Mr. Hiam might retort that these are exactly the sorts the insects like if he had not cut the ground from under his feet by the above mentioned admission, that they do not attack those they like best.

I am still open to conviction, but since that statement was published I am more than ever convinced that whatever insects your correspondent finds in the wounds on his trees are the consequence and not the cause of the canker.—W.

ADIANTUM CUNEATUM.—Plants that have been yielding fronds for cutting during the past six or seven months should be sorted, for several of them will have discontinued growing. These should be removed to a cool structure, where more air can play about them, for three weeks or a month. This will have the effect of inducing them to rest. The small useless fronds at the base should be removed; in fact, it is a good plan to cut all off and start the plants again into growth in a close, moist, moderately warm structure. Plants subject to this treatment will grow and yield quantities of fronds until the end of the year. Young plants in 4-inch pots may be placed into 6-inch in a temperature of 60°. From November they will supply fronds throughout January and February, the two worst months of the year. Small plants raised

from spores sown early in the year may be pricked into pans, boxes, or singly in thumb pots. Use for these a good proportion of leaf mould to encourage free growth. Afford plants that are growing luxuriantly plenty of room, for if crowded thickly together their fronds are liable to be deformed and useless. Give liberal supplies of water, as if the roots become once dry the fronds suffer.—B.



ROSES IN POTS.

HYBRID Perpetuals that are established in pots for forcing will need attention. Plants that were lifted and placed in 7-inch pots last autumn should be placed into 9-inch at once. The pots should be well and carefully drained and the plants potted without disturbing their roots further than is necessary to remove the old drainage. The soil should be pressed firmly into the pots and the plants plunged in an open sunny position where they can be carefully watered and liberally syringed to keep the foliage free from insects. These plants will make a strong second growth and fill their pots with roots by autumn. Plants that are already in pots 9 or 10 inches in diameter may also be repotted. These should have the drainage removed and the old soil carefully reduced one-third, and larger pots will not be required. The plants should be stood in a shady place for ten days or a fortnight, and syringed during bright weather three or four times daily. This will preserve the foliage in good condition, and root activity will quickly commence. When signs of growth are visible plunge the pots in a sunny place. It is a mistake to delay the potting of Roses that have to be forced until late in the season. When done early they are well established and the pots full of roots before the approach of winter, which is of considerable importance in securing strong growth and fine early flowers. Use for a compost good fibry loam, one-seventh of decayed manure, one 6-inch potful of bonemeal, and the same quantity of soot to each harrowful of compost. If the loam is of a heavy nature render it porous by the addition of sand; if light, reduce dry clay to powder and incorporate it with the loam.

TEA VARIETIES.

Where a house is devoted to the smaller-growing kinds it will be necessary to give them full ventilation day and night. The doors of the structure may also be left open. If the lights can be removed and the plants fully exposed all the better. Mulch the border to prevent the surface drying rapidly. The plants must not suffer by an insufficient supply of water, and the foliage should be kept free from spider by a judicious use of the syringe. Should red spider make its appearance syringe the plants with a solution of sulphur and water. A 3-inch potful of the latter to four gallons of water will be ample. Leave this on the plants for three or four days, then wash the foliage with clean water. Roses in pots may be repotted as advised for H.P.'s. Add in the compost advised for them one-third of leaf mould for the Teas. Encourage such varieties as *Maréchal Niel*, *Gloire de Dijon*, and others to make vigorous growth by feeding them liberally with liquid manure if limited for space at their roots. Keep the shoots tied from the glass as they extend.—B.

TERRA COTTA ROSE.

I SEND you a specimen of my new Rose *Terra Cotta*, a sport from *Anna Ollivier*. It was mentioned by Mr. W. Raillem two years ago, when writing about the Roses at the National Rose Show, about the middle or end of July. The one enclosed is a fair specimen of what they have been for about ten, twelve, or fifteen years, only just one part of a dwarf bush (about a third). The opposite part is always quite the original flower, cream colour. I have about half a dozen huddled on the common Briar. I shall send you one or two blooms off each of those huddled on the common Briar in a few days, then I shall ask you to give your opinion of them in the *Journal of Horticulture*. One of the best qualities is it always takes a few days to open; for a hutton-hole is one of the best, and has always been a great favourite.—H. FOSTER.

[The bud sent was a very pretty one, neat in form, fragrant, and of a distinct shade, fairly well expressed by the name *Terra Cotta*. It is much darker in colour than its parent bloom, which accompanied the specimen of the sport received. The blooms from the Briar are larger and of very good shape.]

ROSE GRAND MOGUL.

As the hedding season is commencing it is as well that we should know whether *Grand Mogul* is to be reckoned a distinct Rose, or to be coupled with *Jean Soupert* in the "too-much-alike" schedule. I myself can see no difference between them, either in flower, leaf, or growth.—DUCKWING.

SOUVENIR D'ELISE ROSE.

As a huttonhole Rose in a small state this variety is excellent, or for bouquets its beautiful form and colour—a delicate pink or a deep blush.

—is always admired. The manner in which it unfolds its petals from the bud is pleasing. This variety generally carries ample foliage, deep green in colour, which very much enhances its appearance. Either in a cut state for exhibition or when growing on the plant, whether it be as a dwarf or cultivated in standard form, this Rose is capital this season.

DWARF ROSES IN SHRUBBERIES.

In no position do dwarf-growing Hybrid Perpetual Roses show to greater advantage than in the front parts of shrubbery borders, especially so when the colours are bright—as for instance John Hopper, Charles Lefebvre, and others of that type. If a good background of greenery be available so much the better, as it tends to show the colours to greater advantage. To have them grown to suit various positions, such as narrow and wide borders, and to preserve a gradation to the front, the plants should be pruned rather differently from the orthodox two or three eyes from the base of last year's pruning. If a greater length of last year's wood be left uncut at pruning time a more abundant supply of blooms will be the result, creating of course a larger show. Take care to prevent the roots of surrounding trees or shrubs encroaching so far as to rob the Roses of support in the shape of manure in the soil and moisture in dry weather. If there is a suspicion of this cut off these roots during the winter by taking out a trench at a distance of 18 inches around the Roses, and at sufficient depth to sever all gross roots.—M.

NOTES ON THE NATIONAL SHOWS.

THE CRYSTAL PALACE.

It seemed pretty clear that northern and late growers would have a good time at the Crystal Palace in this exceptionally early season. I had ripe Tomatoes out of doors on a wooden fence on June 25th, and Alfred Colomb in a blaze on June 22nd on the same plants which were beginning to bloom last year on July 23rd. With me Roses of all kinds were certainly nearly a fortnight earlier than the average. In forecasting the probable winners of the principal events, Messrs. Harkness naturally came into one's mind as likely to regain the professional trophy. And among amateurs it seemed likely that Mr. T. B. Hall, the winner on both occasions of the Jubilee trophy, might have a chance of extending his triumphs. This gentleman, however, to the great regret of his many friends, has retired from the arena; and, failing him, Messrs. Grant and Pemberton, who, by the help of goodly stores of freshly budded plants, are generally able to show well late in the season, seemed to be the most formidable competitors. This would have been a fairly accurate prophecy, Messrs. Harkness among nurserymen, and Grant and Pemberton among amateurs, having it pretty well their own way at the two shows, and sharing the spoils between them. But another Yorkshire firm of nurserymen, Messrs. Mack, are creeping up, have taken a decidedly high position this year, and must not be omitted in our future reckoning; while the rival amateur champions have also a follower who has been rising gradually but surely every year, now treading closely on their heels, and I expect to see Mr. Lindsell enter the lists for the trophy next season.

Exhibitors would generally agree, I think, that you can show pretty well in continued hot weather if your Roses are at their best, and in continued cool weather, though Teas will not be so good if you husband your blooms; that a dull day after several hot ones makes the best possible preparation for cutting; and that a hot day after several cool ones begets disappointment and disgust. This last was the fate of East Anglian growers in preparing for the Crystal Palace. We had four cool, cloudy days in succession, followed by Friday, July 5th, the day before the Show, which was blazing hot, and the result was that in the afternoon there was not a bloom to be found in the proper condition. Some years ago Mr. Baker gave an account (in the "Rosarian's Year-Book," I think) of his successful journey to the distant Norwich Rose Show in 1879. He commenced cutting, he said, at 5.30 (say, I forget the exact times), and finished staging at 7.10. This sounded so delightfully business-like that I have always adopted it, and make a mental note, at least, of the time occupied. But on this occasion a well-known East Anglian amateur who has often done well, told me as we journeyed up together, that he commenced cutting at 5.55, and finished staging at 6 P.M.! He went up with six small Roses only, and, save for the want of a box to show them in, they might have gone in his pocket or his hat, I was almost saying his buttonhole. He is a past master in the art of staging, but I fear that he got no prize whatever, though he has often taken premier honours in Teas. The nakedness of our part of the land was thus shown pretty clearly. I fancy that other parts of England did not have those four cloudy days followed by that hot one; and, indeed, East Anglia did not appear in her strength at the Palace.

Personally, I was much longer in my preparations; it was a terrible job. The whole rosery seemed a mass of colour, yet you might go down whole rows and not find a single bloom in just the right stage—Roses, Roses everywhere, and never a one to cut. Presently there was a cry of alarm from my assistant, waiting for blooms to stage, echoed by two or three small helpers. Casting away my scissors, I had suddenly sat down on the grass in the midst of the Roses, in shirt sleeves and despair, and refused to be comforted. I was lugged up by main force, and pushed all over the weary round again. Many a pendant past bloom was turned up and rejected three or four times over. It was a poor lot indeed, considering that it was the first time I had been "fully out" at the National. And no complacent consultation of the watch signalled the

time of "finished staging." The night was cool in town, and the Roses bore the journey well. We must hold the Shah, or rather the Palace authorities who turned us into a tent, responsible for a little confusion and overcrowding of exhibits. And if Mr. Head did have a *mauvais quart d'heure* he certainly bore it very well. My trebles were "skied" fortunately, as I believe, it was impossible for any judge 8 feet high to have seen them. And I am happily convinced that a closer inspection would have been more likely to have placed them in a lower than a higher position.

It was a capital show in a great many respects, but I am afraid a good many of us were not overwhelmed with delight at the visit of the Persian monarch, whose subjects, I am told, make jam, as well as attar, of Rose petals. We looked upon the being turned out of the Palace itself, the finest site in England for a Rose show, as rather a grievance. We had hoped our new Royal patroness would have had something better than a mere State view of our national Show, and that in a year, too, when Princess of Wales Tea has been, with me at least, better than ever before. And, last but not least, the many-headed crowd of Shah-hunters, which soon swamped the tent, rendered a good view of the exhibits impossible. Indeed, when the big gold-medal policeman (a fine specimen truly, but he did not look like "a distinct sport," or even "a variety not yet in commerce" opened the floodgates and let the torrent in I was glad to flee for some lunch, and any inspection afterwards was hopeless. And I have the greatest respect for the reporter of the Journal who managed, under the circumstances, to give such a good and full account.

My notes of the actual exhibits, &c., must therefore be brief. It was pleasant to see Mr. Prince and his son fixing the gold medal card to the Rose which bears their name, though it was a pity that they again failed to show what really seems to be a worthy Rose in anything like good form. On the other hand I was sorry not to be able to see a familiar picture of former years, the hero of many a tournament of Roses leisurely resuming his coat as the hour struck, while his portly foreman gave the last glances of satisfaction to the Alderney-butter-fed seventy-two. East Anglia was out of it, but lives to fight another day. Of individual blooms the first to catch the eye in Messrs. Harkness' trophy stand was a bloom of Amazone (of all Roses in the world), not grand in shape, but remarkable for size, and very telling in colour. In my hurried tour of the tent I really thought Mr. Lindsell's box of trebles as good a stand as any in the Show. Her Majesty was shown well, the twelves of Mr. G. Paul and Mr. Grant being very fine. It is essentially a Rose for nurserymen and "big battalion" amateurs. Exactly three-fourths of my own plants, cut-backs and maidens, have at present failed to show any sign of bloom whatever.

In Tea Roses Comtesse de Nadaillae was very much to the fore, as it always will be when the earlier Souvenir d'Elise, the queen of show Roses, is over. Two others, Francisca Kruger and Madame Angèle Jacquier, each ten years old, have taken a much higher position in the last two years, and must now be reckoned among the best. Niphotos was very fine, and there was a neat and pretty treble shown of that old torment Monsieur Furtado. I only hope its exhibition will not tempt any confiding amateur to try and grow it.—W. R. RAILLEM.

CLOVE CARNATION PAUL ENGLEHEART.

I SEND you a bunch of the bedding Clove Carnation Paul Engleheart, which I have been distributing for the past two seasons. It is what it professes to be, a first-rate border plant, especially valuable for massing, and, as you will see, the stems are so sturdy that they are able to support the fine head of flowers without stakes. Those sent are cut from last season's layers, the plants being less than a year old; but the second season we reckon to be the best for this particular variety, when the clumps are grand with some two hundred flowers open at once on each. Autumn planting seems to be absolutely necessary to its well-being, as layers kept in pots during the winter are not to be compared with those planted out in October, a fact which should be noted in its cultivation. I may add that this border Carnation is beginning to attract attention in the U.S.A. A favourable criticism has appeared in the *American Garden and Forest*, July 10th.—GILBERT DAVIDSON.

[The trusses and blooms of this crimson Clove Carnation are the finest we have seen. On one stem there are five expanded blooms, each 3 inches in diameter, on footstalks so strong that there is not the slightest tendency of the flowers to "hang down their heads." Some of the petals exceed 1½ inch in diameter. This variety has been advertised in this journal, and wherever such examples are grown as those before us they would be an ornament to any garden, and, we think, bound to give satisfaction to admirers of hardy border flowers.]

MANURING FIG TREES.—Occasionally trees are met with that would be benefited by an annual top-dressing of fresh loam, manure, chemical or solid, and chalk or lime rubbish, this serving to keep the roots active near the surface without causing an unfruitful growth. Prior to applying this top-dressing the surface soil should be forked away from the roots, and either returned on the top of the fresh compost or wheeled away altogether. A mulching of strawy manure ought also to be given in addition to the top-dressing, as it is very certain heavily cropped trees with their roots in a much impoverished border will not

produce fruit of the best quality. The least that can be done to productive old trees located in a hot and dry corner is to loosen the soil about their roots and heavily mulch with good solid manure, strawy litter spread over this serving to keep it always moist. Liquid manure may also be safely given to these comparatively stunted trees both now and during the summer; but, if it is repeated, on no account should any trees already too vigorous to be profitable receive either top-dressings, manure solid or liquid. A surfacing of leaf soil would serve to attract and keep the roots near the surface, this tending to cause sturdy rather than gross unfruitful top growth.—W. I.



EVENTS OF THE WEEK.—The National Chrysanthemum Society's annual excursion will take place on Monday next, August 12th, Hatfield and Knebworth Gardens being the places selected this year. Full particulars as to trains, &c., will be found in another paragraph. The Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster, on Tuesday, August 13th, at 11 A.M. On Thursday, August 15th, the annual Exhibition will be held at Maidenhead. A sale of Orchids and other plants will be held at Sorbie, Tunbridge Wells, on August 14th, by Messrs. Brackett & Son.

FELLOWS OF THE ROYAL HORTICULTURAL SOCIETY.—From a list before us of Fellows elected during the last four months we find the number as follows:—April, thirty-six; May, twenty-five; June, twenty-two; and July, sixteen, with one associate, making exactly one hundred during the period in question.

ROLLISSON'S TELEGRAPH CUCUMBER.—Mr. George Bunyard sends us a brace of fruit representing what he calls the Maidstone strain of this variety. They are 20 inches long, straight, uniform in thickness, and excellent. They were cut from plants that have been bearing for two months.

PETROLEUM FOR DESTROYING WASPS' NESTS.—As a destroyer of the insect enemies of the garden no other substance perhaps has gained such popularity as petroleum; but until this year we never tried it for the above purpose. A wasps' nest was discovered in a very inaccessible place in the wall of an outhouse, where most other remedies could not be applied with safety. After some consideration the effect of syringing petroleum into it was tried, with the gratifying result that all the inmates were killed, and since then whenever a nest is discovered a small quantity has been poured into it at dusk, producing the same deadly consequences. Its cleanliness and effectiveness has caused us to discard all other destroyers in its favour.—M.D.

MR. W. HOLMES writes:—"In response to very many inquiries I have pleasure in announcing that the accustomed summer meeting of members and friends of the NATIONAL CHRYSANTHEMUM SOCIETY will this year be held on Monday, August 12th. I have received permission from Lord Salisbury, and also from Lord Lytton, to visit their respective gardens and parks at Hatfield and Knebworth, and I have very little doubt that given fine weather a most enjoyable outing may be anticipated. The Great Northern Railway Company have very considerably reduced their ordinary fares for this occasion, and I have arranged with the proprietor of the Lytton Arms Hotel for refreshments. The cost, inclusive of railway fares, dinner and tea, will be 7s. each. Arrangements.—10.15 (sharp), the party will assemble at King's Cross main line, local platform; 11.17, arrive at Hatfield, five minutes' walk to Hatfield House gardens, inspection of gardens and park, &c.; 2 o'clock, re-assemble at Hatfield Station; 2.17, arrive at Knebworth station and walk to Lytton arms; 2.45, dinner, and afterwards walk to Knebworth House, inspection of gardens and park, &c.; 7.30, tea at Lytton arms; 8.59, Knebworth station; 9.55, arrive at King's Cross. N.B.—A train also leaves Knebworth at 6.55 P.M., and arrives at King's Cross at 7.48 P.M."

IMPROVING GRAVELLY SOILS.—It was a great pleasure to see a letter again in our Journal from that veteran horticulturist "Upwards and Onwards." In that letter he writes of having to deal with a gravelly soil at Woodstock, and as I have the like—viz., a shallow gravelly soil resting on a bed of gravel, I should be glad to know how he

dealt with that soil, so as to bring it into a high state of fertility, and how he managed to grow such crops as Peas and summer Cauliflowers. Practical information on this point such as he has given on Strawberries would no doubt be of great value to many.—H. C. R.

—"M. C." writes:—"I recently had an opportunity of inspecting a very fine crop of Tomatoes in the gardens at HAM GREEN, BRISTOL. The variety grown is exclusively that known as Ham Green Favourite, and as far as I could judge of its merits it should soon become a favourite in every establishment where medium-sized, solid, and smooth fruits are required in quantity. In one house some twenty-five plants trained on the single stem system presented a remarkable appearance; racemes of fruit as long as one's arm depended at short intervals from the abnormally stout stems, bearing on an average from ten to twelve fruits of from 2 to 3 inches in diameter, perfectly smooth, and of a bright coral red. On one raceme I counted the almost incredible number of seventeen fruits all of good size and shape. What the aggregate weight of the crop is I should not venture to state, but if anyone should desire to see Tomatoes growing as they are sometimes figured in seedsmen's catalogues, they should not fail to pay a visit to Ham Green.

—"In another house without artificial heat the crop was equally fine, though somewhat later, the long strings of fruits showing its freedom in setting by swelling off the fruit to the extreme tips of the racemes. Mr. Crocker is to be complimented on his acquisition of such an apparently valuable variety; also in the production of such a magnificent crop of fruit, as undoubtedly the skill that is brought to bear on their cultivation materially adds to such successful results.

—"SOME GRAPES of more than ordinary quality were also worthy of note, a fine crop of Muscats in one division of a range of fruit houses being especially good, while in the late house some bunches of Lady Downe's were of exceptional size and promise. Good crops of Peaches and Nectarines in other divisions were being gathered, and some large healthy specimen Ferns in another house, with a small but select collection of stove plants, all in clean and vigorous condition, completed the range of fruit and plant houses.

—"IN the open ground CHRYSANTHEMUMS were represented by fine healthy plants, with leaves down to the rims of the pot, evincing the skill exercised in their culture, and an opinion expressed that something more than average quality bloom should reward the labour bestowed on them met with a cordial invitation to 'come and see' in due time, a kindness which I shall not fail to take advantage of. A batch of Tuberous Begonias in cold frames were worthy of inspection, fine massive flowers and strong healthy foliage showing plainly that they were happy under the treatment accorded them.

—"CROPS in the KITCHEN GARDEN were of good uniform quality, 'deep cultivation and adequate manuring' being Mr. Crocker's motto in this department. Some beds of double white Stocks, Princess Alice (Veitch's strain) were of superior quality, as were also other beds of Empress White Asters. These were but a few of the many objects of interest in these well-kept gardens over which Mr. Crocker so ably presides.—M. C."

—"GARDENING APPOINTMENT.—Mr. R. Russell, late foreman at Shelton Abbey, Co. Wicklow, has been appointed head gardener to the Earl of Mayo, Palmerstown, Co. Kildare.

—"BULB SHOW AT HAARLEM in 1890.—The General Royal Union for the cultivation of flower roots at Haarlem has sent to its members the schedule of prizes for the sixteenth flower show of that society. This will be the fourth large exhibition to be held at Haarlem. Such shows are opened every five years on the same system as the large exhibitions at Ghent (Belgium) take place. The last of the Haarlem shows was in 1885, and then the collections of Hyacinths, Tulips, and other bulbous plants doubtless were as numerous and as good as ever were seen at any other exhibition. The next show promises to be a similar attraction. Not less than 253 prizes, consisting of gold, gilt, silver, and bronze medals are offered in 105 classes for Hyacinths, Tulips, Narcissus, Crocus, Amaryllis, and miscellaneous bulbs and roots, as well as for bouquets, &c., consisting of flowers of the same class of plants. The show is merely arranged to promote the bulb cultivation of Haarlem, and from this special point of view is certainly not to be surpassed. It will be of great interest to foreign horticulturists to pay a visit to Haarlem in the days the show is opened, which will be from March 21st to 25th, 1890. For particulars, information can be had from the General Secretary Mr. D. Bakker, Gedempte, Oude Gracht No. 110, Haarlem, Holland.

— **SUSSEX RAINFALL.**—The rainfall registered at Borde Hill, Cuckfield, during July was 3.75 inches, being 1.21 inch above the average. The heaviest fall was 0.85 inch, on 23rd, rain falling on fifteen days. The highest temperature (not strictly speaking shade temperature) was 90° on the 6th, the lowest 47° on the 20th. Mean day temperature 77.1, mean night temperature 52.1°, mean temperature 64.6°—exactly the average of the past seven years in the same position.—R. INGLIS.

— **YOUR correspondent "J. R. S. C.,"** under "Notes and Gleanings," issue August 1st, cautions his English friends against following the example of the Americans in the use of PARIS GREEN AS AN INSECTICIDE. In an article to the Journal on this subject I mentioned the use of arsenic in California in combatting the codlin moth larvæ; but as it is used in the proportion of about 1 lb. to 200 gallons of water, and sprayed on the trees (Apple and Pear) as soon as the blossom has fallen, it would seem reasonable to suppose that no poison could remain by the time the fruit has matured, as no more than one drop of this solution could remain on the embryo Apple. But as we do not resort to any such measures on mere supposition, we have the word of such eminent scientists as Prof. E. W. Hilgard of the State University of California, that no possible trace of poison remains. This has been practised also for many years in the Eastern States, as is found to be the most successful remedy for this particular pest.—LEONARD COATES, *Henley-on-Thames*.

— **ECKFORD'S NEW SWEET PEAS.**—All lovers of our hardy garden flowers will find in Mr. Eckford's grand new varieties of Sweet Peas something worth having in their gardens. Mr. Eckford, now of Wem, Salop, for years past has been hard at work hybridising and improving the ordinary garden Sweet Pea, and for a few years past has, through the medium of the seedsmen of the country, been giving us new varieties. He was asked to send blooms of a few varieties to the Solihull Flower Show on the 24th July, to give the Midland people an opportunity of seeing what is being done with this favourite garden flower. A dozen varieties in bunches were sent—viz., Captain of the Blues, a very fine variety; Primrose, Princess of Wales, Boreatton, Cardinal, very rich in colour; Isa Eckford, Queen of England, Apple Blossom, Miss Hunt, Purple Prince, Splendour, and Mrs. Gladstone. All these are very fine varieties, and surprised and greatly pleased the large number of visitors at the show. There can be no question as to their great beauty, and as Sweet Peas are so easily cultivated and seed easily saved, Eckford's new Sweet Peas ought to be in every garden.—D.

— **POTATO DISEASE.**—The warm, showery weather we have been having during the past fortnight has already caused the disease to appear. I first noticed it in a quarter of kidney Potatoes on July 26th. It was then very slight; but now there is not a garden or field of Potatoes in the neighbourhood but what is injured, in fact one may scent it a hundred yards distant when walking along the roads. So far I have not yet seen a diseased tuber, but the probability is that ere long we shall have a different tale to tell. The Potatoes were looking remarkably well up to a few days ago; all varieties are, however, later than usual, owing no doubt to the cold spring. Previous to the disease setting in the haulm of even the Ashleafs was as green as ever, and the skins were not set. I remember, two years ago some writer expressing the opinion that the disease had died out, little or no appearance of it being visible that year. Judging from present appearances the writer will get a somewhat rude awakening this year from the premature conclusions then arrived at.—LIMERICK.

— **RED SPIDER.**—I cannot allow that interesting and instructive article from your correspondent Mr. G. Abbey (page 92) on red spider to pass without a brief reference. In the first place Mr. Abbey, I think, is entitled to many thanks from both practical and other gardeners, for so ably putting before your readers his valuable information on this subject. No doubt a dry atmosphere principally causes the appearance of red spider; also if plants are allowed to get dry at the roots it has a similar effect. There is also some truth in the assertion of some writers respecting insect pests attacking principally our unhealthy plants, for it is in such an atmosphere as your correspondent describes that unhealthy plants are to be found. They cannot be otherwise in a house insufficiently ventilated. And again, such checks as a too high and a too low temperature are at all times to be avoided if we are to keep our plants in a healthy condition and free from insect pests. I have thirteen houses in these gardens under my charge, both fruit and plant houses, and I can always keep red spider at bay by the use of the syringe and the garden engine, with the assistance of sulphur and linseed oil made

into a paint, about the consistency of ordinary paint, and applied to the hot-water pipes every spring.—ALFRED BISHOP, *The Gardens, Westley Hall, Bury St. Edmunds*.

— **PINE TREES LOSING THEIR FOLIAGE.**—We have some remarkably fine specimens of *Pinus Menziesi*, and during the month of April the entire foliage from foot to summit turned brown and fell off; not a solitary needle was left on any of them. Some of the trees are on very high ground, but sheltered by other trees; others are planted at the same elevation and quite exposed, while more are planted on low, sheltered ground. They were all alike, 60 feet and upwards in height as brown and as bare as a Larch in January. It was the middle of June before any of the trees recommenced growth. I had begun to think they would die, and it is now several inches in length. Of course all the centre of the trees are as bare as can be, rendering them very unsightly features here. Can anyone suggest a probable cause for this strange behaviour? Some of the trees are growing on shallow, sandy loam resting on sandstone; in some places the subsoil is gravel; others are growing in peaty soil—in fact, in an exhausted bog. There is no lime in the soil. Some of the trees are as much as four miles apart.—HANDY ANDY.

— **THE issue of the *Botanical Magazine* for July** contains coloured illustrations of the following plants. T. 7063, *Pandanus labyrinthicus*, a Screw Pine long cultivated at Kew under the name of *P. ceramicus*. It is a native of Sumatra and other Malayan islands. T. 7064, *Syringa villosa*, a native of Chikli, province of China, on mountains near Pekin, where it was discovered by D'Incarville before 1740, recently collected and seeds sent to Kew by Dr. Bretschneider. The plants first flowered in May, 1888. The leaves are small, ovate, and the flowers pale rosy lilac. T. 7065, *Olearia macrodonta*, a New Zealand "Daisy Tree," with hard corymbs of small white flower heads, each having a reddish centre. Flowered in Mr. W. E. Gumbleton's garden, Belgrave, Cork, on a south wall, June 1883, where it stood without protection for three years. T. 7066, *Disa lacera* var. *multifida*, a Cape of Good Hope Orchid with blue flowers, figured in the *Journal of Horticulture*, p. 221, 1888. T. 7067, *Eucryphia pinnatifolia*, a native of Chili, "confined to the Cordillera of Concepcion, where it forms a bushy tree 10 feet high, and is called Nirrhe." Introduced by Messrs. Veitch & Sons, and found to be hardy. The flowers are large, comprising four broad white petals and numerous stamens, the leaves pinnate and bright shining green.

COLCHICUMS.

It seems a little unseasonable, and a little unwelcome, to think and speak, in the height of summer, of late autumn flowers, but in gardening it is necessary to "take thought for the morrow," and it will, I hope, be sufficient apology for these notes to state that late in July is probably the best time to purchase and plant roots of the Colchicums (Meadow Saffrons or Autumn Crocuses as they are frequently called). These two latter names are far from being correct, and however they may be sanctioned by long habit are only misleading to the inexperienced and unwary. The true Meadow Saffron is a *Crocus*, *C. sativus*, which was at one time largely cultivated at Saffron Walden for its styles, which yielded the saffron of commerce. As for autumn Crocuses, properly so called, there are many species well worthy of cultivation, and no one who has seen the root of a Colchicum will admit its title to the name of *Crocus*. The Colchicums have been placed in the natural order Melanthaceæ, while the Crocuses belong to the Iridaceæ; but a small number of species are commonly grown in gardens, the great similarity in general appearance possibly preventing the general introduction of many species. The Dutch growers catalogue more species and varieties than our bulb dealers, and many of these have sufficient dissimilarity to make them valuable to the collector of hardy plants who seeks to bridge the quickly narrowing gulf between autumn and spring flowers.

The best known species in our gardens is *C. autumnale*, a native, flowering in September or October, as do most of the Colchicums. There are several varieties of this species, and but little difference in the various shades of lilac, rose, or purple among the singles, but the single white is a desirable plant, and the double variety almost deserves a column to itself. The double *C. autumnale* in my garden I should call lilac, and it is so called in most English lists. Some of the Dutch growers, however, catalogue two varieties—a double purple and a double rose—and which of these is the lilac it would be hard to say. Whatever its real colour it is a most desirable plant to grow, and far superior, with its perfectly double blooms, to the single form, one great merit being its longer period of bloom. The double white is still better,

and has only one great fault; the price places it beyond the reach of many of us, unless at the sacrifice of other plants. It is quoted at from 2s. 6d. to 6s., and the amateur is apt to pause and reflect upon the many bulbs he could buy for even 2s. 6d. before investing in the grand double white Colchicum.

Another neat flower is *C. variegatum*, which is dwarfier than *C. autumnale*, and is beautifully chequered with rose, purple, and white. It is a native of the Levant, and was, I understand, introduced about 1629.

A still more desirable species is *C. byzantinum*, said to have been introduced from Constantinople about the same time. It has handsome soft lilac mauve flowers and broad leaves, which, like those of the other Colchicums, do not appear till spring. There is, I believe, a fine double form of this and a variety with variegated leaves, the latter very rare; but I have not met with either of them.

The largest of the single-flowered species is known as *C. speciosum*, which has rich rose coloured flowers, and the best variety, which is difficult to obtain true, is known as *C. speciosum rubrum*, and has reddish stems. It is still comparatively expensive, although much cheaper than *C. autumnale album plenum*. There are at least ten other autumn-flowering Colchicums in commerce, but I am not sufficiently acquainted with their merits to venture any remarks upon them. The genus is not exhausted, however, as there are two spring species in commerce, a new *C. luteum*, yellow, as its name denotes, which I have not yet seen, and another, *C. crociflorum*, which has been in cultivation for a long time, but is not often met with. That in my garden is white internally with blackish purple base, and the greater part of the exterior petals of the same colour edged with white. When it has been well established and increased to some extent it will have a good appearance. There is, however, such a wealth of colour among the Crocuses in spring that a good stock of the autumn Colchicums should be secured before venturing upon the spring species.

It is unnecessary to give details as to the culture of such easily grown plants. They should be purchased as soon as they can be had from the dealers and planted 3 or 4 inches deep in fairly good soil. If secured early they will bloom well the same autumn, and, increasing from year to year, will form good clumps, giving the owner and all observers much pleasure in the late autumn days, when the leaves are falling and Nature is fast assuming her winter garb. Let me add an expression of opinion that the Colchicums will give most satisfaction if carpeted with some plant which will give the flowers the natural support afforded by surrounding vegetation in their native habitats, but which would not be injured by their luxuriant leaves in spring.—S. ARNOTT, *Rosedene, Kirkbean, N.B.*

SEASONABLE HINTS ON FLORISTS' FLOWERS.

As I have more than once intimated, I do not pretend in these notes to do more than refer to the work that I find necessary in my own garden, that I do not grow flowers for exhibition, and that my collections are really selections, and limited, therefore, in the number of the varieties grown. There are some persons who grow one, or at most two kinds of florists' flowers, and they are consequently able to look after and manage a large collection, but with me the ease is different. I like to have a succession of flowers, and so begin in the spring with Auriculas, then following with Pansies, Ranunculus, Roses, Carnations and Picotees, Gladioli, and ending with Chrysanthemums. I attain my object, it may be at the expense of completeness in any of them, but with the increase of pleasure to myself. I have not yet fallen into the practice of counting all flowers that are grown in collections—Fuchsias, Cinerarias, Pentstemons, &c.—as florists' flowers, and, with the exception of the Rose, adhere to those what were so regarded by the older florists, although they would have been puzzled to give a definition of them, or why they admitted them and excluded others.

AURICULAS.—I believe, on the whole, that it has been a favourable season so far for these flowers. We have had no intense July heat, the thermometer here in Kent has never gone into the eighties, and a cool July is favourable to the Auricula. They will soon, as the weather seems as if was coming warmer, require more attention as to watering. All dead or decaying leaves should be removed, weeds should be pulled up, and the surface of the soil gently stirred. If the woolly aphid is observed round the neck or collar of the plant, it is well to remove it, but otherwise we need not trouble ourselves about it, for I think more experience has convinced us that we were wrong in attributing to it such destructive powers, although there was a good deal to be said on the *prima facie* view of the ease, that a beast that apparently lived on the juices of the roots could not be otherwise than destructive. As to autumn blooming, I believe it to be very much a question of varieties, some being more apt to do it than others, but nothing must be done to encourage it, and the frames should be kept as open as possible and shaded from the sun.

CARNATIONS AND PICOTEES.—Now is the time when the important

operation of layering will have to be carried out, and where the collection is large it will absorb a good deal of time; where it is small, as in my own case, it can be taken more leisurely. The first thing to be done is to go through the plants and see what have run—i.e., lost their character and become selfs, the stripe having run into the white and so spoiled the flower. These should be either cut away or pulled up, unless, as in some cases, they have become very bright selfs, when they may be reserved for the border, but carefully marked so as not to reproduce them again in the collection. The cause of this seems still to be a mystery. It is more common amongst Carnations than Picotees, and as its cause is unknown no remedy can be proposed. A supply of pegs for layering should be procured, and where Brake abounds there is nothing so good. They are firm, and yet generally decay by the time the layer is fit to be taken off. The compost for layering them in should now also be got ready; loam, leaf mould, and some road grit forms an excellent one. It must be light and open, so that the young rootlets may speedily make their way into it, whilst it must have sufficient consistency not to be washed away in the process of watering. It is now that one great advantage of growing them in pots is realised. The pot can be placed on a bank on a level with the operator, and thus all stooping is avoided. The operation of layering is a very simple one, but like a good many simple things is not easily explained without the use of illustrations; but as the possession of a collection implies almost the knowledge how to layer, it will be unnecessary to explain it, and, indeed, its success depends more, perhaps, on other things than on the layering itself. Thus it is necessary before commencing to see that the earth in the pot is thoroughly wet, or the plants will suffer, as gentle watering will be the rule afterwards. We must also be assured as to the condition of the shoots to be layered, for if they are not sufficiently hard the cut joint will probably rot, and so the layer be lost, and if too hard the probability is that it will not send forth any roots, but the joint will simply barden and so be useless. The old soil in the pot should be removed to about an inch in depth, and the fresh compost put in its place unless the soil has sunk a good deal, when it will be only necessary to stir the surface. This is one of the few cases in which I ever allow a sieve to be used, but it is admirable in this, and the soil before being used for layering may be, nay, ought to be, passed through one. After layering the soil should be watered with a fine rose, and the pots sheltered for a little while from heavy rain, but in a week or ten days they may be placed where they will be fully exposed to the weather.

GLADIOLI.—This is the month which is to reward the grower for all his pains, or perhaps to give him sore disappointment. A good deal depends, of course, on the weather; but I think there is little doubt that a dry and warm August, which for so many reasons we hope to have, is more favourable to them than the wet cold season we had last year. I find they are showing at what I believe to be their normal time, thus some of the earlier flowering varieties are making their appearance. Shakespeare was in bloom on July 28th; Nereide, Pasteur, and others, which are marked A on Vilmorin's catalogue as the first to flower, are opening, and I imagine the season will be at least three weeks earlier than last year. Those growers who care to have their flowers in perfection will be careful to stake each as it advances into bloom. The spikes come in so many different ways that it is well to see what direction it is about to take before staking. The stems should be tied in two or three places, and loose enough to allow room for the stem, but not so loose as to endanger its being snapped across. Should the weather be very hot and dry watering must be resorted to, and when done the heds should have a thorough watering, as small applications are of little use. There is but little chance of seeing any of these fine flowers at exhibitions until next month, and by that time I imagine the best blooms in or near the metropolis will be over; but when "everybody is out of town" it is useless attempting a flower show, and London has been so used up this season that it would require a great deal to arouse it; but wherever notes can be taken there the grower should be ready to watch for new new flowers, or old ones which he has perhaps missed. It ought to be a good season for saving seed, and where this is desired the stems should be left tied to the stakes; but where there is no wish to save seed they ought to be removed as soon as the bloom is over.

PANSIES.—The small collection I have of these is now planted out in a shady part of my garden, where they for the present simply require to be kept free from weeds, and to be watered when the weather is dry.

ROSES.—After the first bloom is over it is too much the fashion to leave Roses to themselves, but this is unwise; good blooms may yet be had from this year's shoots, where disbudding must be as carefully practised now as in the earlier part of the season. Another point often neglected—viz., tying out the newly formed shoots, so as to let all the air and light possible into the trees. Where mildew has appeared, sulphide of potassium will be found the most useful preparation, but I do not think that at this stage of their growth mildew permanently injures the plant, although it very much disfigures it. Waterings with liquid manure are now very useful, and if Roses were better treated at this season of the year I am inclined to think they would pay for it next season. There is every prospect of a good autumnal bloom amongst the Teas, which thus doubly earn gratitude from Rose growers.

I add nothing on the culture of Chrysanthemums at this very important season of their growth, for they are largely discoursed upon in the Journal by able growers. My collection, which is grown for our own pleasure, looks exceedingly well, with capital healthy foliage. Tulips and Ranunculus are now reposing quietly in their respective

drawers and boxes, so that they require no attention, and no observations in these notes on florists' flowers.—D., Deal.

THE REV. M. J. BERKELEY, F.R.S.

THE announcement of the death of our revered friend Mr. Berkeley just as we were going to press last week gave us no time to furnish a portrait of him; but we have now the pleasure of presenting one which represents him as he was in recent years while still in the possession of those intellectual powers for which he was eminently distinguished.

themselves into a committee to secure a painted portrait, to be presented to the Linnean Society. The appeal for subscriptions to the scientific world was quickly responded to, and a very excellent portrait, painted by Mr. J. T. Peele, was the result. The presentation to the Society was made in the name of the subscribers by Sir Joseph Hooker, and a replica was painted for Mr. Berkeley's family.

Mr. Berkeley was buried in the churchyard of Sibbertoft on Saturday last, the 3rd inst.

ALL who have known the late Rev. M. J. Berkeley, or have seen any

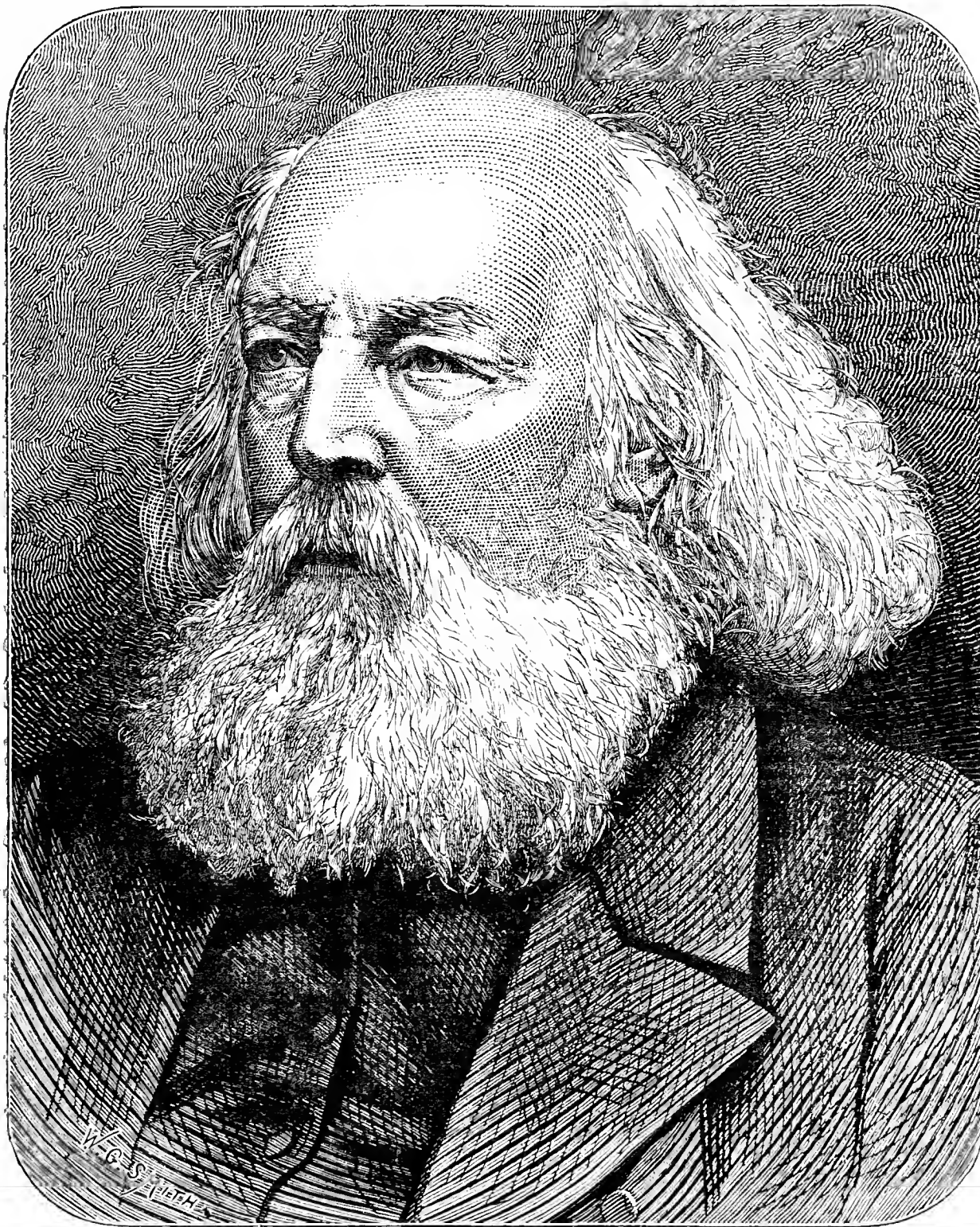


FIG. 14.—THE REV. M. J. BERKELEY.

The portrait is from the pencil of Mr. Worthington G. Smith, the talented botanical artist and faithful follower of Mr. Berkeley in fungological investigations; and we may well believe that the sympathetic spirit, as well as the genius of the artist, combined in producing a portrait which so faithfully recalls the noble features of one of our most distinguished, as he was one of the most modest, of our scientific men.

A few years ago some of Mr. Berkeley's personal friends formed

of his writings, would read the news of his death in last week's issue with unfeigned regret. It has been my privilege during the last ten or twelve years to have spent many a pleasant hour on several occasions in his company, in walking and admiring plants and trees that were known to him thirty years or more previously, and he would point out the progress made in many of them, notably Coniferous trees, many of which he remembered when planted, and had watched their progress, till they have now made handsome specimens from 50 to 70 feet in height.

Writing as a gardener, one could not be in his company for long before finding that he possessed a great knowledge of fruits, flowers, and vegetables, and his vast intellect and kindly tongue were ever ready to impart useful information. It mattered not whether it was Grapes, Melons, Peaches, Plums, Apples, Pears, with Potatoes and all other vegetables—herbaceous and alpine plants, trees, shrubs, and forest trees—he was always well informed respecting the merits and defects of the latest introductions and novelties; he could also speak of the long list of good old varieties of fruits, flowers, and vegetables that had come under his notice during sixty years. His memory also was marvellous, and when last I had the pleasure and privilege of a walk round the gardens here with him a few years ago, then in his eighty-third year, it was astonishing how ready he was in giving the names of common British plants that I wished to know. Few men I have seen at that age with such a quick and correct memory.

Mr. Berkeley was frequently seen at the shows of the Royal Horticultural Society at Kensington twelve to sixteen years ago, and many gardeners that have seen his patriarchal and noble countenance there on several occasions would never forget him. These notes are penned by one who was a great admirer of, and who has met with many acts of kindness from the deceased gentleman, and who feels greatly indebted to him for much useful knowledge.—A. HARDING, *Orton Hall Gardens, Peterborough.*

A CATALOGUE OF GARDEN IVIES.

[We have been favoured by Mr. Shirley Hibberd with the following notes on Garden Ivies.]

(Concluded from page 88.)

VARIEGATED FORMS OF HEDERA HELIX.

31. MARGINATA is the general name of some half-dozen or more distinct varieties with variegated leaves. Great confusion prevails in the garden names of these, such labels as are commonly seen being worse than useless, because they are attached to the plants on something like the principle of drawing them from a ballot box. The marginate series cost me a lot of trouble in the first instance to put them in definite order, but the rule still prevails of naming them at haphazard and without any rule at all. The Marginata of my list has green stems, the leafstalks slightly purplish, the leaves bluntly triangular, the ground colour dark green mottled with patches of light green and a thin wash of grey; the margins creamy white during summer, in autumn showing tints of red or purple, the tone of which is greatly influenced by weather and local circumstances.

Syn. *Argentea elegans*, *Arborescens variegata*.

32. MARGINATA GRANDIS has broad leaves and a rich massive appearance, with a decided touch of blue in the central parts of the leaf. It is boldly margined with creamy variegation, which never tends to any tone of yellow. It is a true running Ivy, yet the growth is short and stout, and occasionally short spurs with entire ovate leaves appear representing the growth of a fruiting Ivy. These arborescent shoots often produce flowers, but the fruits do not so often appear.

Syn. *Marginata robusta*, *Arborescens marginata*, *Tricolor*, *Elegantissima*, *Marginata grandis*.

33. MARGINATA MAJOR is a grand member of this series, the leaves broad, obscurely lobed; the colour deep bluish green, with broad margin of creamy variegation with a decided tinge of yellow.

Syn. *Marginata argentea*, *Marginata pulchella*, *Marginata elegantissima*, *Marginata purpurea*, *Silver Stripe*.

33. MARGINATA MEDIA comes near to Marginata grandis, but is always less robust; the variegation creamy white without any trace of yellow.

Syn. *Marginata elegantissima*, *Marginata robusta*, *Elegantissima marginata rubra*.

34. MARGINATA MINOR is the collective name of a group of small-leaved Ivies with silvery margins that appear to be from a common stock, but slightly differing amongst themselves. They agree in a weakly and wiry growth; the leaves are small, angular, deltoid in form, obscurely lobed, the central part dull green, slightly washed with grey, the margin a clear cream colour passing into red or purple in autumn, but never acquiring so full a tone of red as the next on the list.

Syn. *Marginata argentea*, *Folius argosencens* (?), *Marginata elegans*, *Cavendishi*, *Marginata latifolia*, *Aurea elegantissima*, *Broad-leaved Silver*, *Marginata purpurea*.

36. MARGINATA RUBRA agrees in a general way with Marginata media, but differs in autumn when the margins of the leaves and the leafstalks acquire a lively red or purple colour, which increases in intensity until the end of the year, after which it passes away, so that in spring, when growth recommences, there is scarcely a stain of red left. This is a tender variety, and is often injured by frost or long-continued winter damp.

Syn. *Cullisi*, *Elegantissima*, *Argentea rubra*, *Latifolia elegans*, *Tricolor*, *Marginata pulchella*, *Elegantissima marginata*.

37. SUB-MARGINATA is distinct and beautiful, rich in colour and in synonyms. The stems are purplish; the leaves are of medium size, irregular spoon-shaped, or broad with unequal base and one blunt lobe;

the colour deep bluish green, margined with a thin line of whitish variegation, supplemented in autumn by pleasing shades of purple and red. It is distinct and beautiful.

Syn. *Rhombea variegata*, *Marginata major*, *Rhomboides Japonica*, *Japonica variegata*, *New Japanese*, *Scintilla argentea*, *Purpurea metallica*, *Rhomboides obovata variegata*.

38. MARGINATA LACTEA is deep and beautiful, the stems deep purple, the leafstalks reddish-purple, the leaves triangular with obscure blunt rhomboid basal lobes, or with occasional ear-like lobes projecting singly. The ground colour dark green with a few faint blotches of grey, the margin bright cream colour, delicately tinged with pink in autumn.

Syn. *Arborescens alba lutescens*.

39. DISCOLOR has a neat habit of growth, and is easily identified. The leaves are deltoid, with three to five obtuse lobes; the prevailing colour dark dull green, the whole plant sprinkled with grey dots, the young growth being almost white, and sometimes tinged with red, and the young leafstalks red. In winter there remains but little of the variegation.

Syn. *Maculata*, *Minor Marmorata*, *Maculata minor*, *Marmorata elegantissima*.

40. CINEREA MARGINATA is a silvery margined form of the Himalayan Ivy. It is of no particular value.

Syn. *Broad-leaved silver* (?).

41. MARGINATA AUREA is one of the best of the golden-leaved wall Ivies. The young stems are stout, the leaves elongate triangular, delicately margined with faint orange yellow, tending to red.

Syn. *Robusta*.

42. SULPHUREA has a peculiar appearance, and is easily identified; the leaves are small, triangular, and flat, often spoon-shaped and concave, with small ear-like lobes; the variegation is plentiful but dull; the prevailing colours sulphur-yellow and impure cream.

Syn. *Marginata argentea*, *Arborescens argentea variegata*, *Marginata canescens*.

43. CHRYSOPHYLLA is a free growing golden-leaved Ivy that soon becomes tree-like under pot culture. In its climbing growth its broad leaves are variously lobed, but the lobes obtuse and few in number. The variegation occurs in patches on the young growth, many of the leaves being wholly of a deep yellow, others mottled with paler yellow on a green ground, and much of the plant deep green without any variegation. There are several rather distinct forms of this, the products of local circumstances, the best of them are richly golden and agreeably constant.

Syn. *Aurea spectabilis*, *Spectabilis aurea*, *Aurea densa minor*, *Aurea or Golden*, *Aurea maculata*, *Canariensis aurea marmorata*, *Folius aurea*.

44. CHRYSOPHYLLA PALMATA.—Leaves distinctly and handsomely palmate lobed, the colour nearly the same as the last.

Syn. *Palmata aurea*, *Palmata nova aurea* (a selected form), *Mrs. Pollock*.

45. SUCCINATA is of a weakly habit, neat and pretty, but not showy; the leaves are bluntly sagittate in form; richly mottled amber and pale green. A gem for the rockery.

46. CHRYSOMELA will become famous as "Golden Gem," for it is a golden form of my "Emerald Gem," and hitherto has proved the finest of the golden Ivies. The leaves are in general smaller than those of Emerald Gem, but a certain number are exact counterparts of them in every particular; others are wholly of a rich brilliant orange colour or patched, and margined with variegation of a deep yellow colour.

Syn. *Golden Gem*.

ARBORESCENT FORMS OF HEDERA HELIX.

47. MELANOCARPA is the common European Ivy as met with on towers and ruins where it has ceased to climb, and has become tree-like and fruitful. The habit of growth is much influenced by position; in gardens it is usually long-jointed and wiry, in places much exposed, short, stout, and compact. The leaves are ovate, without lobes, and much prolonged, or broad and oval, sometimes short with a few obscure lobes; the colour deep rich green and glossy. The green flowers appear in September, and give to the tree a most beautiful appearance. They are succeeded by black berries.

Syn. *Arborescens*, *Arborea*, *Baccifera nigra*.

48. CORRUGATA is the counterpart of crenata and assumably its fruiting form. It is handsome as a garden shrub, and bears fruit plentifully.

Syn. *Palmata digitata*, *Helix incisa*, *Baccifera crenata*.

49. LATIFOLIA is a large-leaved fruiting Ivy, the leaves broad ovate, deep green. It is common in the Channel Islands.

Syn. *Baccifera latifolia*.

50. CHRYSOCARPA differs but little in leafage from our common Melanocarpa, but is less robust in habit, and forms a neater bush. The berries are of a dull yellow colour. This, beyond all doubt, is the Poet's Ivy, and if a fanciful name could be of any use, we would name it "Poetica."

Syn. *Baccifera lutea*, *Arborea flava*.

51. LEUCOCARPA is a variety of the foregoing with white berries. I have not seen the fruit.

Syn. *Baccifera alba*.

52. RUBROCARPA is a provisional name for the red-berried Ivy M. Andre has reported on. It appears to be the fruiting form of Cinerea.

53. ARGENTEA MAJOR is a free-growing, handsome, silvery-leaved

tree Ivy. The growth is free and somewhat scandent, and in the arborescent series it is the counterpart of *Marginata grandis* among the climbing Ivies. The green part of the leaf is rich holly green, the margin creamy or whitish, the whole leaf highly varnished.

Syn. *Canariensis argentea*, *Argentea elegans*, *New Silver*, *Latifolia argentea marginata*.

54. ARGENTEA MINOR is more decidedly arborescent than the last named, and exceedingly beautiful. The leaves are almost uniformly ovate and slightly concave, but a few short side-lobes occur. The central part of the leaf is of a grey green, with broad margin of clear creamy variegation.

Syn. *Marginata argentea*, *Marginata aurea*, *Arborea variegata*, *Japonica argentea*, *Pine's New Silver*.

ARGENTEA FULGENS is the most brilliantly coloured of the creamy-edged tree Ivies; the leaves are broadly and irregularly margined rich full cream, the central part rich dark green; the whole surface varnished. It grows slowly.

Syn. *Arborea elegantissima*, *Arborescens argentea*, *Helix arbor elegans*.

AUREOLA is useful as a tree Ivy, as in a full exposure it acquires a gay yellow colouring, less powerful than that of *Aurea*, while the leaves are often broadly three-lobed, and the colouring, a pale tint of yellow, is chiefly apparent on the young growth. Systematic pruning is essential to maintain the beauty of neat specimens.

55. LUTEOLA has a vigorous constitution. The stems and leafstalks are usually green, but sometimes purplish. The leaves vary from a broad ovate outline to an irregular rhomboid, and a few three-lobed leaves appear. The mature growth is green, the new rising leaves yellow.

Syn. *Pumila aurea*, *Aurea spectabilis*, *Arborea aurea*.

56. SUB-LUTEA may be regarded as the tree form of *Sulphurea*, but is a better plant, and makes a fairly good subject for pot culture.

Syn. *Arborescens minor lutea*, *Arborescens alba lutescens*, *Hedera variegata*.

57. AUREA is of bold character with ovate leaves like those of the common tree form of *Helix*. The young shoots are wholly of a rich golden colour. Inconstant, but a brilliant variety in a gravelly or chalky soil.

Syn. *Arborescens aurea maculata*.

58. SUB-FLAVA is a yellowish-tinted form of the tree *Helix*. It is of no particular value, but might be useful for winter bedding.

Syn. *Arborescens flava variegata*.

59. ALBO-LINEATA is a distinct and pleasing form of *Sub-marginata*, and may be called the tree Ivy of Japan. The leaves are long ovate, bright green, with a "wire edge" of whitish variegation.

Syn. *Veitchii*, *Rhomboides variegata*.

HEDERA CANARIENSIS, THE AFRICAN IVY.

60. CANARIENSIS.—The Linnæan name *Helix* being adopted in this list for the European Ivy, it will be consistent to allow Willdenow's "*Canariensis*" to appear for the so-called "Irish" or African Ivy. Though well known and universally appreciated, it may be proper to say here that in its climbing form the leaves are broad, fine-angled, the central and side lobes nearly corresponding in length and breadth, the basal lobes short and rounding handsomely to the insertion of the petiole, which is long and purplish. The colour of the leaf is a rich deep green distinctly marked with veins of a light green colour, the principal of which rise above the surface like threads laid on.

Syn. *Canariensis*, *Hibernica*, *Vegeta*, *Africana*.

61. VIRIDIS differs in form and colour from the Irish Ivy, the leaves are often orbicular, but generally speaking they are broadly ovate and obscurely three-lobed, the colour light bright green, the general appearance of the plant massive and robust, but by reason of its light colour, cheerful and very distinct. It is known in gardens as the "Algerian," and is doubtless more truly African than *Canariensis*.

Syn. *Algeriensis*, *gigantea*.

62. FICULA has the advantage of a distinct character that commands respect. The leaf is large, boldly cut into five to seven lobes, which are distinctly wedge-shaped from the middle to the blunt end, and from the base of the wedge are cut straight down to the blade. This and the peculiar dull green colour of the whole plant render it strikingly imitative of the common Fig, although perhaps on a close comparison the likeness would be somewhat remote. It has been figured as the Fig-leaved Ivy.

Syn. *Azorica*, *Canariensis azorica*.

63. CUSPIDATA MAJOR is a noble member of the group comprising *Palmata*, *Digitata*, and *Crenata*, the last the weakest of the group. The one now before us is the strongest, for it is a trifle more robust than the bold *Palmata*. The leafstalks are very long and of a grass-green colour, the leaf broad and expanding from the petiole in the sharp lines right and left to the apex of each of the basal lobes. The two side lobes are large and project forward, the middle lobe smaller, all the bifurcations cocked. The colour is a rich deep green, with the principal veins boldly marked.

Syn. *Hibernica palmata*.

VARIEGATED FORMS OF THE AFRICAN IVY.

64. VARIEGATA is a scarce variety of the Irish Ivy; the leafstalks are purplish, the leaves broadly wedge-shaped or obscurely three-lobed, the surface smooth and glossy; the central parts of leaf dark green, the margin bright primrose, tinted with cream colour.

Syn. *Hibernica variegata*.

65. PALLIDA is well known for its bold but inconstant variegation in large patches, and sometimes overspreading the whole leaf with pale primrose yellow.

Syn. *Golden Blotched*, *Hibernica variegata*, *Aurea maculata*, *Canariensis aurea*.

66. MACULATA has large, rough, wrinkled leaves, the leafstalks purplish; the variegation overspreads the plant in patches and streaks of clear cream-colour, intermixed with shades of greyish green and full dark green.

Syn. *Latifolia maculata*, *Marmorata*, *Variegata*, *Maculata latifolia*.

67. STRIATA, the streaked Ivy, is one of the most brilliant when in good colour. The leaves are less in size than the green form of *Canariensis*, barred, patched, and splashed with pleasing shades of yellowish cream, changing to paler cream; the young leaves often self-coloured rich cream. Grand for a great breadth of wall. The green parts of the leaf are very dark, and the bars and streaks exceedingly bright; it is a kind of "thunder and lightning" Ivy.

Syn. *Canariensis*, *Aurea maculata*, *Aurea marginata*, *Striped Irish*, *New Golden-rayed Irish*.

68. LACTEOLA is a superb plant; rich, delicate, constant, brilliant, and perfectly hardy. The young shoots are of a lively purple colour, the young leaves much blotched and patched with creamy variegation; the older leaves with a fair proportion of green more or less patched and streaked with variegation. One of its characters is to be found in the deficiency of form in the leaves; they are of many shapes and sizes, and usually unsymmetrical and ugly. This variety is a splendid development of *maculata*, and may be identified by its creamy colouring and absolute want of form.

Syn. *Maderiensis variegata*, *Lee's New Silver*, *Lee's Maderensis*.

69. CANESCENS requires a great space and considerable age to display its beauty, and when fully developed it may with propriety be called the "hoary Ivy." In a small state it is poor in appearance and tender in constitution. The leaves are irregular in form, and have no individual beauty; the central parts are greyish green, the margins clear cream. It is well known.

Syn. *Algeriensis foliis variegatis*, *Algeriensis variegata*.

ARBORESCENT FORMS OF THE AFRICAN IVY.

70. ARBORESCENS needs not to be described; it is the bold, fast-growing, rich green, fruiting form of the Irish Ivy. The leaves are broadly ovate and entire; but occasionally lobed leaves appear. It is the "sharp-leaved" Ivy.

Syn. *Canariensis arborescens*, *Hibernica arborescens*, *Canariensis fructifera*.

71. CORDIFOLIA differs from the last in having leaves uniformly cordate, thicker in texture, and lighter in colour; it is the fruiting form of the Algerian Ivy.

Syn. *Hibernica arborescens latifolia*, *Algeriensis arborea*.

72. FLAVA is a counterpart of *Pallida*, the variegation a deeper tone of yellow. It bears the same relation to *Pallida* that *Lacteola* bears to *Maculata* as a further development.

Syn. *Hedera arborea flava variegata*.

73. VARIOCOLORE is a form of *Cordifolia*, with a few stripes and patches of yellowish variegation.

Syn. *Hedera arborea latifolia striata*.

HEDERA COLCHICA, THE ASIATIC IVY.

74. COLCHICA of C. Koch has purple leafstalks and thick leaves of a broad cordate form, usually blunt at the apex, and showing two obscure side lobes. The colour is light green in youth, dark dull green, with occasionally a tinge of bronze when mature. This is a noble Ivy that grows freely, and in a rich soil, with shelter, produces leaves 7 inches in length by 5 in breadth. In the sandy soil in which I have it now the leaves are only half the size I have had them on strong clay land.

Syn. *Rægnieriana*, *Cordifolia*.

75. MACRODONTA is an appropriate name for the noblest wall Ivy we possess. It is of free growth, the leafstalks purplish, the leaves in general form wedge-shaped, with rounded shoulders from the insertion of the stalk to the apex of each side lobe, of which two, short and sharply cut, give distinct form to the leaf. There are indications of other two lobes lower down, whence the form is that of a wedge to the terminal point. The colour is rich full green, the substance leathery; the winter colour deep dull green, with shades of rich bronze.

Syn. *Amurensis*.

76. DENTATA is the largest-leaved Ivy known. The leaves are broadly ovate, or angular cordate, with shoulders almost square to the insertion of the stalk, and occasionally showing two obscure side lobes. On passing the finger along the edge of the leaf from the apex towards the base, a few fine, sharp teeth may be discovered, and these justify its name. It is truly a magnificent Ivy of a grass-green colour, but it always looks distressed, as though suffering from drought. So far from that being the case, a dry position suits it perfectly.

77. DENDROIDEA is the tree form of *Colchica*, a superb evergreen shrub for the front line, and for a selected position. It is the most tree-like of all the Ivies, and grows slowly. The leaves are smaller and narrower than those of the climbing form, and at some little distance the plant may be mistaken for a *Rhododendron*.

Syn. *Rægnieriana arborea*.

My collection consists of about 100 varieties, some twenty or more are either insufficiently distinct or in a probationary stage, and in other

ways not entitled at present to a place in a printed catalogue. Of the foregoing seventy-seven varieties about fifty may be found in the R.H.S. garden at Cbiswick.



CHRYSANTHEMUMS—PARIS GREEN.

ALLOW me to give my experience of the use of the Paris green against insects, as recommended by Mr. Meehan recently. I am growing about 300 Chrysanthemums for big blooms, which were infested with earwigs, and I have tried almost everything to stop them eating the tender leads of the plants without success, so that I bailed with delight anything which would prove a specific against "insects which eat." I therefore mixed the poison as advised, and applied to the plants, just sprinkling the shoots at the tops with a little of the powder. All went well from Thursday to Saturday, when the leads seemed drooping somewhat, and on the Sunday morning imagine my dismay at finding nearly the whole of my plants with dead leads, and all my chance of competing at any of this year's shows thrown clean away. This, as you may imagine, is very vexing and annoying, in addition to the loss of labour and time given by an amateur to the plants, which would soon have been showing the crown buds. I had about 100 cut down plants with three or four strong leads (which I was growing for grouping at our local show, where I obtained first prize last year), and which are of course utterly useless. I should be glad to know whether any similar result has been experienced by other growers, and I cannot but feel that in some way Mr. Meehan has erred for once in recommending something, which, although certainly killing the insects, or preventing their eating the shoots, is positively harmful to the plants themselves. I am afraid I am now quite out of it for this year's shows, but any useful hints would be more appreciated.—C. J. H. C.

[Mr. Meehan chiefly recommended the use of Paris green for destroying insects on fruit trees, and did not mention Chrysanthemums. Mr. Leonard Coates also stated that it was used in the same way in California at the rate of 1 lb. to 200 gallons of water. It is always wise to proceed experimentally with any new or doubtful remedy, and when we are consulted that is the course we invariably recommend.]

THE CARNATION AND PICOTEE UNION. ANNUAL EXHIBITION.

THIS took place in Mr. Dodwell's garden, Stanley Road, Oxford, on Thursday, August 1st. Of the wonderful display of flowers grown in pots by Mr. Dodwell, and some of his very fine seedlings, we must write later on, as so much space is wanted to fully report the Exhibition. The exhibitors were very numerous, from many parts of the kingdom, many of the flowers exceedingly fine, and in some cases a tendency to overdressing was visible. The extreme heat had told upon some of the flowers, but there was a general admiration of the great quantity of blooms staged, as well as the quality which prevailed.

In the class for *twelve Carnations*, first, Mr. T. Lord, with very fine blooms—viz., Master Fred, Reginald Power, Hewitt's John Harrison, George, Admiral Curzon, a very fine bloom of Deedic, Biddy Malone, William Skirving, Shirley Hibberd, John Ball, Squire Trow, and Robert Houlgrave. Second, Mr. R. Sydenham with Master Fred, James Douglas, Arthur Medhurst, Thalia, Alsimonde, Sarah Payne, Squire Whitbourn, Edward Rowan, George Melville (very good), Biddy Malone, Joseph Lakin, and Henry Cannell (this was also a good stand). Third, Mr. R. Thompson, in whose stand was a beautiful bloom of John Keat. Fourth, Mr. Joseph Lakin, Sybil, Wm. Skirving, and Joseph Lakin (very fine). Fifth, Mr. A. Brown, Thalia and Mrs. May. Sixth, Mr. Rowan, James Douglas and Matador. Seventh, Mr. Samuel Barlow, Crista Galli, Brilliant, and seedling S.F. (very fine). Eighth, Mr. George Chaundy.

Twelve Picotees, white grounds, dissimilar.—First, Mr. T. Lord, with J. B. Bryan, Lady Louise, Zerlina, Brunette, seedling 250 (heavy rose edge, fine petal), Thomas William (excellent), Nellie, Mrs. Sharp, John Smith, Annie Lord, Baroness Burdett Coutts, and one other. A grand lot. Second, Mr. Rowan, with Nellie, Amy Robsart, Mrs. Payne, Jessica, Brunette, Favourite, Mrs. Sharp, Lena, Mary, Edith D'Ombra, Thomas William, and Morna. Third, Mr. Robert Sydenham, with Mrs. Sharp, Her Majesty, Brunette, Annot Lyle, J. B. Bryant, Edith D'Ombra, Jessica, Laura, Hilda, Thomas William, Imogen, and Favourite. The second and third prize blooms were also very fine. Fourth, Mr. T. B. Thomson, Birmingham; fifth, Mr. A. Brown; sixth, Mr. G. Chaundy; seventh, Mr. J. Walker; eighth, Mr. T. Henwood; with five other exhibitors.

Six Carnations, dissimilar.—First, Mr. P. Hellewell, with a grand flower of Master Fred, George Melville, Squire Llewelyn, Robert Lord, Sportsman, and Crista Galli (handsome). Second, Mr. J. Whitham, with Wm. Skirving, Master Stanley, Robert Houlgrave, Crista Galli, James Douglas, and John Harrison. Third, Mr. Thomas Bower, including a fine bloom of Henry Cannell; fourth, Mr. Joe Edwards; fifth, Mr. C.

Phillips; sixth, Mr. W. H. Midgley; seventh, Mr. J. Heddesley; eighth, Mr. J. P. Sharp; ninth, Dr. Benson.

Six Picotees, white grounds, dissimilar.—First, Mr. J. Whitham, with Mrs. Sharp, Brunette, Annie Lord, Zerlina, John Smith, and Thomas William, all very pure in the ground colour. Second, Mr. T. Hellewell with Wm. Simmons. Lyddington's Favourite, Mrs. Payne, Zerlina, Brunette, and Mrs. Sharp. Third, Mr. A. W. Jones, Birmingham, with Favourite, Zerlina, Muriel, John Smith, Mary, and Mrs. Payne. Fourth, Mr. J. P. Sharp; fifth, Mr. W. H. Midgley; sixth, Mr. J. Heddesley; seventh, Mr. T. Bower; eighth, Mr. C. Phillips; ninth, Mr. W. Bacon; with nine other exhibits.

Twelve Miscellaneous Selfs, Fancies, or Yellow Grounds.—First Mr. Wm. Read, gardener to Mr. Dodwell, with grand blooms, consisting of seedlings 167, pale straw with brownish slate colour markings; 180, orange yellow with carmine markings; 24, rich rosy purple self, extra fine; Gladys, lovely soft peach, and excellent; 587, lemon with faint carmine markings; John Willett, rich deep scarlet; 588, straw self; 631, salmon scarlet self; 202, brighter than 167; all Mr. Dodwell's seedlings; also Emma Lakin, a grand white self, and two very distinct varieties from Mr. Benary of Erfurt, who introduced that finest of all yellow selfs, Germania, so generally shown; Schlieben (Benary), buff ground, with French grey markings, is quite distinct and novel in colour, and beautiful, with rose edged petal and form; Theodore (Benary), is of a leaden French grey colour, very distinct, and of fine form and petal. Second, Mr. T. Henwood, whose best were Black Knight, rich violet purple; Rose Celestial, a handsome self; Celia (Fancy), Germania, and Terra Cotta, a lovely variety. Third, Mr. Robert Sydenham, and in this stand was a good bloom of his beautiful rose self sport from Thalia; fourth, Mr. T. Lakin; fifth, Mr. T. Lord; sixth, Mr. T. Anstiss; seventh, Mr. T. B. Thomson; eighth, Mr. George Chaundy, jun.; with four other exhibits.

Six Blooms, Selfs, Fancies, or Yellow Grounds, dissimilar.—First Mr. A. W. Jones, with Mrs. McLaren, Terra Cotta, Mrs. Price, Sir Terry Belch, Mars, and The Bride. Second, Mr. J. S. Heddesley; third, Mr. F. Hooper; fourth, Mr. A. Brown; fifth, Mr. C. Phillips; sixth, Mr. S. Barlow; seventh, Mr. H. Startup; eighth, Dr. Benson; ninth, Mr. Joe Edwards.

These classes were generally and most deservedly admired, and were well filled, and the general verdict given was that fancies and selfs are coming rapidly to the front, alike for their great beauty and variety of colours, and for their free growing habits.

The Kilmurry yellow ground seedlings were naturally looked over with great interest, and many of them are very fine, fully justifying Mr. Dodwell's belief in them at first. Nine prizes were offered for six blooms, not less than three dissimilar, and the various exhibits were a great attraction. Mr. W. Read, gardener to Mr. Dodwell, was first with a splendid six—viz., Alfrey Grev, Tournament, Patrician, Queen of Hearts, Exile, and Nancy. Second, Mr. F. Nutt, Rachel, very fine, and Nora, a first class yellow, Exile and Tournament; third, Mr. G. Chaundy, jun., Gretchen, Nora, and Queen of Hearts, all good; fourth, Mr. Robert Sydenham; fifth, Mr. W. Bacon; sixth, Mr. J. Heddesley; seventh, Mr. Joseph Lakin; eighth, Mr. Storror, a capital bloom of Queen of Hearts was in this stand; ninth, Dr. Benson.

For six Yellow Grounds, dissimilar, any raiser, there was a superb display made by sixteen exhibitors. Mr. W. Read, was first with wonderfully good blooms of Dodwell's seedlings, 180, 191, 202, 117, Lemon Drop, and Mr. Milner, yellow self. It is questionable if finer blooms have ever been staged. Second, Mr. J. Hooper, with Almira, Annie Douglas, Agnes Chambers, Dorothy, Terra Cotta, and Duchess of Teck, very fine. Third, Mr. J. Lakin, with Almira, Annie Douglas, Colonial Beauty, Germania, Agnes Chambers, and Dorothy. Fourth, Mr. T. Henwood; fifth, Mr. R. Sydenham; sixth, Mr. George Chaundy; seventh, Mr. J. Heddesley; eighth, Mr. F. Nutt; ninth, Mr. A. Brown.

The exhibits in the various classes of single specimens were most numerous, and gave the Judges much work. For Carnations (eight classes) there were eight prizes in each class—viz.: *Scarlet Bizarres*.—First and fourth Mr. Lord with Robert Houlgrave, second and seventh with Admiral Curzon, third with Fred, sixth with Alfred, eighth with Master Stanley; Mr. Samuel Barlow being fifth with Robert Houlgrave. *Crimson Bizarres*.—First Mr. Sydenham with Master Fred, and third and seventh with Joseph Lakin; second, Mr. Lord, with Master Fred, fifth with J. M. Bacon, and sixth with Master Fred; fourth, Mr. Thos. Bowes, with Master Fred; and eighth, Mr. T. B. Thomson, with James Merryweather. *Pink Bizarres*.—First and second, Mr. Lord, with John Harrison, excellent; fourth and sixth with Wm. Skirving; third, Mr. Sydenham, with Thomas Anstiss and seventh with Sarah Payne; fifth, Mr. T. B. Thomson, with Sarah Payne; and eighth, Mr. J. Edwards, with William Skirving.

Purple Flakes.—First, Mr. Lord, with Mayor of Nottingham; eighth, George Melville; second and fourth, Mr. T. B. Thomson, with George Melville; third, Mr. Sydenham, with a sport (Sporting Lass) from Sarah Payne; fifth, Mr. Rowan, with George Melville; sixth, Mr. S. Barlow, with Mayor of Nottingham; seventh, Mr. T. Bowes, with Juno. *Scarlet Flakes*.—First, Mr. Sydenham, with Alsimonde, and sixth with Matador; second and fifth, Mr. T. Lord, with Ivanhoe; fourth with Matador, and seventh with Henry Cannell; third, Mr. T. B. Thomson, with Robert Marris; and eighth, Mr. Heddesley, with Tom Lord. *Rose Flakes*.—First, second, third, and fourth, Mr. A. R. Brown, with Thalia; fifth, Mr. Lord, with Crista Galli; sixth and seventh, Mr. Thomas Bowes, with Sibyl; eighth, Mr. Lakin, with Crista Galli.

Sels.—First, Mr. T. B. Thomson, with Germania, a superb yellow; second and fifth, Mr. Lakin, with Emma; fourth, Mr. Heddesley, with Gladys; seventh, Mr. Henwood, with Germania. We could see no names to the other winners.

Fancies.—First, Mr. Read, with Dodwell's seedling 167; third with seedling, and fifth with Terra Cotta; second, Mr. Henwood, with Dorothy; fourth, Mr. A. W. Jones, with Mrs. Maclaren; sixth, Mr. F. Hooper, with Lady Edwards; seventh, Mr. Heddesley, with a seedling; and eighth with Dodwell's Seedling 163.

IN PICOTEES.—*Heavy Reds.*—First, Mr. Read, with Isabel Lakin. Second, third, fourth and fifth Mr. Lord with Brunette. Sixth, Mr. T. B. Thomson with Dr. Epps, and eighth, Mr. R. Sydenham with Brunette. *Light Reds.*—Mr. Lord, first, second, fourth, fifth and seventh with Thomas Williams, Mr. T. B. Thomson third, and Mr. S. Barlow eighth with the same, Mr. Rowan sixth with Mrs. Gorton.

Heavy Purple.—First, Mr. Lord with Mrs. A. Chancellor; fourth, fifth and sixth with Zerlina, eighth Muriel, and second with Amy Robsart. Third, Mr. Jones, seventh, Mr. T. B. Thomson, both with Muriel. *Light Purple.*—First, Mr. T. Henwood with Jessie. Second, Mr. Lord with Baroness Burdett Coutts; fourth and sixth with Mary, and fifth and seventh with Annie Lord. Third, Mr. Rowan with Mary, and eighth, Mr. Joc Edwards with Annie Lord.

Heavy Rose.—First, third and sixth, Mr. Lord with Lady Louise and seventh with Mrs. Sharp. Second, Mr. T. B. Thomson with Campanini, and fifth with Edith D'Ombra. Fourth, Mr. Reid with seedling. Eighth, Mr. Sydenham with Mrs. Sharp. *Light Rose.*—First, fourth, and eighth, Mr. Rowan with Nellie. Second, Mr. Lord with Favourite and third with Nellie. Fifth and sixth Mr. Reid with Nellie, and seventh Mr. W. A. Jones with Favourite.

Yellow Grounds.—Mr. Reid first and third with Almira; second Dodwell's 180; fourth, Germania; seventh, Tournament. Mr. Lakin fifth with Germania and eighth with Agnes Chambers. Sixth, Mr. Henwood with Agnes Chambers.

PREMIER BLOOMS IN THE EXHIBITION. *Carnation.*—Robert Houlgrave, S.B., by Mr. T. Lord. *Picotee.*—Lady Louisa by Mr. T. Lord; yellow self Germania by Mr. Rowan; yellow ground Annie Douglas by Mr. Lakin; Fancy, Dodwell's 167, a peculiar and heavy shade of pale cream and deep lilac, extra fine, by Mr. Reid.

The luncheon followed the judging, and over one hundred friends sat down, Mr. Samuel Barlow in the chair, Mr. Shirley Hibberd in the vice-chair, with Mr. Alderman Buckle of Oxford, and a large number of Mr. Dodwell's friends. It was a wonderful representative gathering of old and young florists, and a strong expression of esteem for Mr. Dodwell, and in full appreciative recognition of the great work he has done for close upon fifty years as a true florist, and in the interest of the Carnation and Picotee in particular, was manifested in the speeches after the luncheon.

Shortly we shall refer to some of his fine seedlings and the display of plants in pots.—AN OLD HAND.

HANCOCK'S IMPROVED PLANT POT.

As will have been noticed, commendatory letters have been published from Chrysanthemum growers respecting this flower pot. The

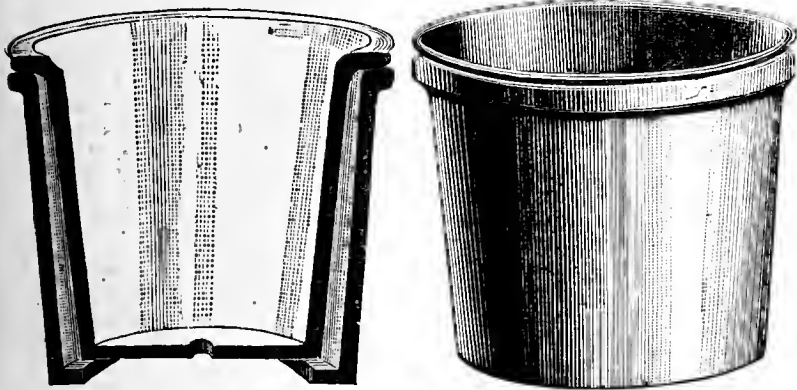


FIG. 15.—SECTION.

FIG. 16.—OUTSIDE.

illustrations show exactly what it is—one pot suspended in another. A specimen before us shows the pot to be strong, well made, neat in appearance, and not so likely to be blown over during a gale as ordinary pots are. The advantages claimed for the double pot are:—1st, The protection of the inner pot from the heat of the sun, thereby preventing the roots being burnt, and ensuring a more even moisture and temperature about the roots. 2nd, Less watering required, consequently less labour. 3rd, Economy of manure, by reason of its strength not being washed away by such frequent waterings. 4th, Security against intrusion of worms. 5th, Greater base to the pot, thereby less risk of being blown or knocked over. 6th, Avoidance, in a great measure, of the alternate roasting and drenching which the roots experience in hot weather.

We think all those claims can be sustained, and, subject to the exercise of sound judgment in watering, for the "knuckle test" cannot

be applied, no doubt Chrysanthemums can be well grown in these pots; and they are not less suitable for Roses and other plants, also fruit-trees in pots placed outdoors in the summer.

HORTICULTURAL SHOWS.

HAYWARDS HEATH HORTICULTURAL SOCIETY.

THIS Society held their first annual Show on Wednesday, the 31st July, in a beautifully situated meadow, by kind permission of Mr. Pannett, under the most favourable and encouraging circumstances. The inhabitants of this prosperous and progressive town have been lagging behind many of the neighbouring villages in Mid-Sussex in horticultural matters, but now they have taken it up they have done so in a manner that shows they mean business. The ladies and gentlemen in the neighbourhood have subscribed liberally to its funds, as have also the local tradesmen; and the way the people turned out, and the hundreds of smiling faces and hearty greetings showed that the efforts of the Society were thoroughly appreciated.

This Society's operations extend to a wider area than the majority of local societies, including twelve parishes—in fact, nearly the whole of Mid-Sussex; and there are thirteen special classes open to the county. In the latter were included groups of miscellaneous plants, Ferns, and foliage plants, and the entries were sufficiently numerous to make a very creditable show. It was gratifying to see a local man—Mr. George Stringer, gardener to R. A. Bevan, Esq., Horsham, Cuckfield—taking first place with his miscellaneous group. Mr. W. Jupp, gardener to T. G. Boulton, Esq., Eastbourne, had the most effective exhibit of foliage plants, his Crotons being very finely coloured, and the arrangement very good. The first prize for a group of Ferns was awarded to some in which there had not been the slightest effort at arrangement for effect, which caused no little dissatisfaction amongst the other exhibitors. No doubt the Judges' manner of reading the schedule, "best collection of Ferns," was correct, although it was generally felt that it did not express the intention of the Committee. A novel class was introduced for the "best collection of fruits, flowers and vegetables, staged for effect, space not to exceed 5 feet square," but not a gardener in the county dared to tackle it. For a collection of nine varieties of vegetables Mr. W. Manton, gardener to Mrs. Borer, Boring, was an easy first with fine samples.

In the division open to Mid-Sussex gardeners only, the entries in the plant classes were not so numerous as would have been expected; no doubt the fact that Handcross is included in the district would make local men rather shy at the idea of having a brush with the specimens from that well-known garden. Mr. J. Voss, gardener to W. Savill, Esq., Lindfield, was first for four foliage plants. Mr. Wickham, Burgess Hill, was first for six Ferns, and the same for six Begonias, the latter being well-grown plants of excellent double varieties. Cut flowers were not a great show, herbaceous flowers being most attractive. The show of fruit was very fair; the entries for Grapes, Melons, Tomatoes, Gooseberries, Currants, &c., were fairly numerous. Mr. Holman, from Hassocks, was first for black Grapes; Mr. Warren, gardener to Mrs. Hanky, Balcombe Place, first for white, with very good Muscats; Mr. Holman had the best Peaches.

The local nurserymen came well to the front. Messrs. Wood and Son, Burcham, Chesham and Sons, Mr. Knight, Mr. Woollard, and Mr. Piper, all had interesting exhibits. The latter gentleman showed two fine fruits of *Araucaria imbricata* from the fine specimens in the Piltdown Nurseries, and with them were shown specimens of the ripe seeds and some small two-year-old seedlings. There were also separate divisions for amateurs and cottagers. On the whole, the first Show of this Society may be regarded as a success. They have an excellent place to hold it in, and it was greatly helped by S. T. D. Thorowgood, Esq., kindly throwing his romantic grounds adjoining open for the occasion, a privilege that was largely taken advantage of. The Committee of this Society did a business-like thing in having a fixed date—viz., the last Wednesday of July. May they go on and prosper, and so fill the place of the now defunct Brighton and Sussex Horticultural Society. By doing so they will give Sussex gardeners a chance of meeting once a year in a most suitable and central place, with every facility for travelling and conveyance of plants, &c., by the railway company. Mr. A. Willmot is the efficient Honorary Secretary.

THE LIVERPOOL SHOW.—AUGUST 3RD AND 5TH.

THE tenth summer Exhibition of this Society was held for the first time in the grounds of the City Police Athletic Society, Fairfield. The position is a good one, but sadly lacks the beautiful surroundings that were so enjoyable at Sefton Park, where the Exhibition has been held from the commencement. The park unfortunately is not easy of access, but the present place is in a moderately thickly populated district. The attendance on the first day, however, as the weather was not very favourable, was not such to excite any great hopes of much better success.

The Exhibition was on the whole equal to those of past years, and the stove and greenhouse plants have never been surpassed. The arrangement was unique, certainly the most perfect at any provincial exhibition. The tents were entered in the centre, which were furnished with Tuberous Begonias, while the stove and greenhouse plants occupied the large tent to the right and left. At the east end were groups and cut flowers, and at the west fruit, vegetables, and groups in the centre. The whole was one large tent projecting at each end considerably, with

a suitable entrance erected in the centre, but not projecting so far as the ends.

Stove and Greenhouse Plants.—These were never better, or shown in larger numbers. In the open class for twelve specimens, six foliage and six flowering, Mr. J. Cypher, Cheltenham, staged in his well-known style, and was accorded the post of honour. His most striking plants were Croton Victoria, C. Sunset, Kentia Fosteriana, Cycas circinalis, Latania borbonica, Ixora Williamsi, Ixora Regina, Erica Iveryana (very good, profusely flowered), Erica obbata purpurea, and Bougainvillea glabra. Mr. W. Finch, gardener to J. Marriott, Esq., Princess Road, Coventry, second; and Mr. C. Roberts, gardener to A. Nickolson, Esq., Leek, Staffordshire, third. In the corresponding class for six plants Mr. Cromwell, gardener to T. S. Timmis, Esq., Cleverley, Allerton, was well first with clean, healthy plants. Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, followed, and Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Wootton, secured the remaining award. For four stove and greenhouse flowering plants, Mr. A. R. Cox, who was placed third, was afterwards given the first position, and his opponents disqualified through staging all stove plants. For one stove plant in bloom Mr. P. Barber, gardener to A. Barnsley, Esq., St. Michaels, was first with a large well-flowered specimen of *Oncidium flexuosum*, Mr. Cromwell second with *Ixora Pilgrimi*, and Mr. Cox third with *Ixora coccinea*. For one greenhouse plant Mr. Finch, gardener to J. Marriott, Esq., Princes Road, Coventry, was first with *Erica impressa*, neat and well flowered. Mr. Cox followed with *Phenocoma prolifera*, a very healthy young specimen. Mr. J. Wilson, gardener to O. H. Williams, Esq., Aigburth, secured the remaining award with a large *Kalosanthus*.

Fine-foliaged Plants.—These were equal in numbers and quality to what have been staged in previous years; in fact, on the whole the plants were fresher and the Crotons more highly coloured. For six plants Mr. J. Jellico was accorded the post of honour, followed by Mr. B. Cromwell, who was a very good second. For four plants, Mr. Thos. Healy, gardener to Col. T. Wilson, Hillside House, Mossley Hill, secured the first; Mr. A. R. Cox was a close second, and Mr. T. Foster, gardener to J. Brancker, Esq., third.

Palms and Cycads.—At the present Exhibition these were all that could be desired in quality, but the numbers did not exceed what have been staged on past occasions. Mr. C. Roberts for three plants took the lead with *Kentia Fosteriana*, *Encephalartos villosus*, and *Latania borbonica*; Mr. A. Cox second, and Mr. J. Jellico third. For one plant Mr. C. Roberts took the lead, followed by Mr. Thos. Healy and Mr. J. Jellico.

Ferns were staged in excellent condition, both exotic and hardy. The plants staged by Mr. Cromwell in the open class for eight exotics were specially worthy of note. The plants were large, clean, and in the best possible condition. The varieties were *Davallia tenuifolia*, *D. fijiensis plumosa*, *Gleichenia Mendelli*, *Nephrolepis furcans*, *N. rupestris*, *Pteris scaberula*. For four plants Mr. Cox took the lead with grand plants of *Cyathea Smithii*, *Cibotium Schiedeii*, *Microlepia hirta cristata*, and *Davallia polydactyla*. Mr. G. Eaton, gardener to W. H. Shirley, Esq., second; and Mr. Thos. Foster third. The last exhibitor took the lead for two filmy Ferns, and staged capital examples. For one Tree Fern Mr. A. R. Cox was first. For one exotic Fern, Mr. Healy was successful. For six hardy Ferns Mr. P. Barber was successful, followed by Mr. J. Hurst, gardener to W. B. Bowering, Esq. Mr. Thos. Foster was first for four pairs of *Lycopodiums*.

Ericas were not numerous, but with one or two exceptions those staged were healthy, not large, but well flowered. For three plants Mr. Cox was first, followed by Mr. J. Cypher.

Tuberous Begonias were exceedingly good, the plants being principally new or moderately new varieties, with large flowers. The plants contributed by successful exhibitors were in most cases 3 feet or more through them. For six plants Mr. Cox was well ahead, followed by Mr. J. Hurst and Mr. T. Jones, gardener to W. C. Clark, Esq. For three plants the same exhibitor was again first, followed by Mr. T. Moorehouse, gardener to R. Brocklehurst, Esq., and Mr. J. Hurst. For one plant Mr. Cox was again successful with a capital specimen.

Coleuses and Cockscombs were good, and the prizes offered were well contested. For six plants of the former Mr. G. Eaton with well-developed plants of bright telling varieties. For six of the latter Mr. J. Stoney, gardener to Sir Thos. Earle, Bart., Allerton Towers, was successful.

Caladiums could not have been exhibited in better condition, the plants standing up well without the slightest support. For six plants Mr. J. Warrington, gardener to T. Bright, Esq., took the lead. Mr. J. Hurst was successful for *Petunias*, which were also shown in capital condition.

Fuchsias and Pelargoniums.—The former have never been shown in the best possible condition, but this year the plants displayed a marked improvement. For three plants Mr. Cox took the lead with large pyramidal plants, 6 or 7 feet high, and most profusely flowered. Mr. Cromwell was successful with one plant. The *Pelargoniums* were numerous and formed a brilliant display, nearly every example being in good condition. For four singles Mr. T. Gowan was first. For one Mr. D. McKellar, gardener to A. J. Steel, Esq., Bank Hill Road, Aigburth, took the lead. Mr. J. Gowan was again to the fore with four doubles, and Mr. J. Stoney for four ivyleaf varieties, the plants being large and profusely flowered.

Groups.—These have been steadily improving, and on the whole were this year better than ever. In the open class no one competed against

Messrs. R. P. Kerr & Sons, Aigburth. They staged in their usual style an exceedingly effective group, and were deservedly given the first award. In the corresponding local class for a circular group for effect, space not to exceed 250 square feet, Mr. A. R. Cox was first with a light, tasteful arrangement; Mr. Jellico was a close second, followed by Mr. J. Jones with a heavier and too green an arrangement, Mr. T. Moorehouse being awarded an extra prize.

Table plants were staged in the usual style, small, neat, and effective. Mr. C. Evans, gardener to W. Maxwell, Esq., Aigburth, was first, followed by Mr. J. Jellico and Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury.

Cut Flowers.—Roses have been staged in larger numbers and of better quality, with the exception perhaps of those that took the lead in the class for forty-eight distinct single blooms; but considering the weather for a few days previous to the Show, those staged were creditable throughout. In the class for forty-eight Messrs. Alex. Dickson and Sons, Newtonards, were a long way ahead with magnificent blooms, Mrs. J. Laing being especially conspicuous. Messrs. J. Cocker & Sons were placed second, and Messrs. T. Smith & Sons, Stranraer, third. Four collections were staged. For eighteen Tea and Noisette varieties the same number were staged, and the second-named exhibitor gained the post of honour for a capital collection of fresh bright blooms. Mr. H. Merryweather, Southwell, was second, and Messrs. A. Dickson and Sons third with large but loose blooms. For twenty-four Mr. T. Leadbetter, gardener to T. B. Hall, Esq., Larchwood, Rock Ferry, was first with capital blooms, slightly spotted by heavy rains. Mr. S. Budd, Bath, second. For twelve blooms Mr. T. B. Hall was again successful, followed by Mr. Bell, St. George's Mount, and S. H. Stott, Esq., the last being a very weak stand. In the corresponding class for twelve, six dark and six light, of two varieties, Messrs. A. Dickson & Sons were first with Alfred Colomb and La France. Messrs. J. Smith & Sons second with Marshal P. Wilder and Mcrveille de Lyon. Third, Messrs. Cocker & Sons. For the best and most tastefully arranged box, not less than twelve varieties, box 4 feet long by 1½ foot wide, four competitors staged, and Mr. T. B. Hall was first with the best flowers, showing both H.P.'s and Teas on a base of *Adiantum cuneatum*. Mr. J. Gee, Greenhill, Allerton, was second; and Mr. J. Raffles Bully, Breck Hey, third. Stove and greenhouse cut flowers have been considerably better in the past. The stand of eighteen distinct kinds was poor, and needs no further comment. The first stand for twelve varieties was all that could be desired. Mr. J. Bounds, gardener to A. L. Jones, Esq., Oaklands, Aigburth, was deservedly successful; Mr. J. Warrington and Mr. J. Hurst also showing well, and gained honours in the order named.

Herbaceous cut flowers have been good in past years, but on the present occasion they were excellent. The competition was keen, every collection being of admirable quality. For a collection of twenty-four Mr. G. Eaton was first, Messrs. Dicksons (Limited), Chester, second, and Mr. J. Warrington third. For twelve Mr. J. Bounds was first. For two bouquets in the open class Mr. T. Jones, florist, Hardman Street, Liverpool, was the only exhibitor, and was placed first for two splendid examples. Those in the local class for one were very poor indeed. For eighteen Carnations Mr. R. Brownhill, Ravenswood, Rock Ferry, was well first. For twelve Dahlias Mr. G. Burden, gardener to G. Cockburn, Esq., Oxtun, was first with capital blooms.

Fruit.—The average quality of the past years was maintained, but there was a considerable falling off in numbers, especially in the Grape, Peach, and Nectarine classes. For the collection of twelve dishes, distinct, Mr. J. Edmunds, gardener to the Duke of St. Albans, Bestwood, was first, having splendid Madresfield Court and Muscat of Alexandria Grapes, the two bunches of the latter being considerably finer than any in the Exhibition. Other dishes were Best of All Melon, Brown Turkey Figs, Early Prolific Plums, Queen Pine, Elruge Nectarine, and Grosse Mignonne Peaches. Mr. J. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was second, and Mr. Dawes, gardener to Hon. Mrs. Ingram, Leeds, third. For six dishes Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Liverpool, was first, followed by Mr. J. Stoney. For four bunches of Grapes five collections were staged. Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, was first with large well coloured bunches of Madresfield Court, Black Hamburg, Muscat Alexandria, and Buckland Sweetwater. Mr. J. Stevenson, gardener to Col. Pilkington, Prescot, was second, and Mr. T. Elsworthy third, both showing remarkably well. For two bunches of Black Hamburg Grapes Mr. J. Stevenson was first with large bunches with large berries perfectly coloured. Mr. S. Burden, gardener to J. D. Tyson, Esq., second, and Mr. W. Oldham, gardener to J. Beecham, Esq., Huyton, third. Both the second and third were almost perfect examples. For two bunches Muscat of Alexandria Mr. J. Stoney was first with large bunches with good berries slightly spotted by syringing. Mr. J. Edmunds was second with good bunches rather short of colour, and Mr. Middleton third with fine bunches, which had been, from appearance, suddenly exposed to the light. For two bunches any other black Mr. Middleton was first with superb bunches of Madresfield Court, large bunches with good berries well coloured. For two bunches, any other white, Mr. J. Bennett, gardener to the Hon. C. H. Wynn, was first. For one dish of Peaches Mr. W. H. Divers, Ketton Hall, was first with large highly coloured fruits of Royal George. Mr. Elsworthy was second with Bellegarde. For one dish of Nectarines the last exhibitor was first with Elruge. For one green-fleshed Melon Mr. J. Craven, gardener to J. Grant Morris, Esq., Allerton Priory, was first with Her-

of Lockinge. For one scarlet-flesh Melon Mr. J. Bennett was first with Sutton's Masterpiece.

Vegetables.—Exhibits in this department were numerous and good, especially in the classes devoted to collections. For twelve varieties, distinct, Mr. J. Lambert was first, followed by Mr. Forder, gardener to C. Cornwallis West, Esq., M.P., Ruthin Castle, and Mr. J. Stoney third. Eight collections were staged. In the corresponding local class for eight varieties ten were staged; the last named exhibitor was successful, followed closely by Mr. J. Littlemore, Aintree, and Mr. Pownall, Prescott. For six varieties, prizes offered by Messrs. Sutton & Sons, Reading, eight collections were staged. Mr. Forder took the lead with White Tripoli Onions, Perfection Toma'o, seedling Potato, President Pea, Magnum Bonum Cauliflower, and Scarlet Runner Beans, Mr. J. Lambert and Mr. J. Stoney being second and third respectively. For four dishes of Peas Mr. R. Dawes was first. For four dishes of Potatoes Mr. J. Winkworth, gardener to R. Brocklebank, Esq., Childwell Hall, was first. For three dishes of Tomatoes Mr. G. Eaton was placed first. For three plants in pots Mr. J. Stoney was first with healthy well fruited plants of Chiswick Red, Webb's Sensation, and Dedham Favourite.

Certificates of merit were granted to the Liverpool Horticultural Company, Garston, for groups of Tea Roses and wreaths; Mr. T. Jones, florist, Hardman Street, for crosses, wreaths, and other floral decorations; to Messrs. Dicksons, Limited, Chester, for a collection of stove and greenhouse flowering and foliage plants; Messrs. R. P. Ker & Sons for Vines in pots; Messrs. Laing & Mather, Kelso, for a large and varied collection of Carnations, both named and border kinds. The usual samples of implements were shown by Mr. J. Bramham, Messrs. F. & J. Mee, Bethel, Harkin, Webster, and H. Caesar, Knutsford, for which certificates of merit were granted.

SOUTHAMPTON—AUGUST 3RD AND 5TH.

THE Royal Horticultural Society of Southampton held a most satisfactory exhibition in their beautiful grounds in Westwood Park. This Society deserves a far greater share of success financially than they have obtained during the last two or three years, as, owing to bad weather and counter attractions, the receipts have not nearly come up to what is required to maintain its position. On the opening day rain fell in torrents. This, coupled with the Naval Review at Portsmouth, deterred many visitors from attending. The exhibits were arranged in two spacious marquees, one being 200 feet long and 75 feet wide. This contained the specimen stove and greenhouse plants, groups and other miscellaneous plants; the other tent being of the same length and 45 feet wide. In this was arranged down the middle, on two broad tables, the fruit, vegetables, cut flowers, and table decorations.

Plants.—These formed an important part of the Exhibition, substantial prizes being offered in the principal classes. In that for twelve stove or greenhouse specimens, six to be in bloom and the remainder foliage, there were three entries. Mr. J. Cypher, Cheltenham, won first honours with superior flowering plants, amongst which was a magnificent *Phenocoma prolifera* Barnesi, fully 7 feet in diameter, in perfect health and freely flowered, also a model *Erica tricolor coronata* 3 feet in diameter, densely flowered, fresh, and the admiration of all. Finely coloured Crotons and healthy Palms were also included. Mr. G. Lock, gardener to B. C. Cleave, Esq., Newcombe House, Crediton, Devon, was second, showing finely coloured Crotons, a little weak in flowering plants. Mr. Wills, gardener to Mrs. Pearce, Bassett, Southampton, took third honours with creditable examples.

With ten stove or greenhouse, five to be flowering and five foliage, there were three competitors. Mr. N. Blandford, gardener to Mrs. Haselfoot, Bitterne, was an easy first. Especially noticeable was *Allamanda Hendersoni* covered with flowers. Mr. Currey, gardener to Col. Pepper, Milford Hall, Salisbury, was second. Mr. Wills took first honours for six specimens in bloom, staging *Statice profusa* 6 feet across and finely flowered, the remainder being good also. Mr. Lock was second. The positions of these two exhibitors were reversed in the class for six foliage plants, Mr. Lock staging a healthy specimen of *Kentia Belmoreana*, and highly coloured Crotons *angustifolius* and *Johannis*.

Six competed in the miscellaneous group class of 120 square feet. Mr. Lock was an easy first with a charming arrangement of suitable plants; Mr. Wills was second, also with a good group. The last-named also exhibited *Fuchsias*, exotic and hardy Ferns, *Begonias*, and table plants, while Mr. Busby, gardener to F. Willan, Esq., Thornhill Park, Bitterne, was successful with *Gloxinias* and *Pelargoniums*.

Fruit.—Fruit was staged in fair numbers, and of capital quality. Five competitors staged collections of six varieties, Pines excluded. Mr. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was easily first, having good Madresfield Court and Muscat of Alexandria Grapes, Hero of Lockinge Melon, and Elruge Nectarines finely coloured. Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough, was second; and Mr. J. Evans, gardener to Lady Ashburton, Melchet Court, Romsey, third. For three bunches of Black Grapes Mr. Inglefield, with very fine examples of Black Hamburgh, was an easy first; and Mr. Ward second with the same sort. With three bunches of Muscat Alexandria in the class for white Grapes Mr. Ward led the way. In the class for two bunches of black and white Grapes Mr. J. Allen, gardener to Captain the Hon. V. Montague, Wherwell Priory, Andover, took first honours with good produce in both classes. In the single bunch class for both black and white some good samples were staged; the best black bunch was from Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Fare-

ham, a good one of Black Hamburgh, and one for Mr. Ward, a finely coloured bunch of Buckland Sweetwater, gained first prize. Mr. Evans had the best scarlet flesh Melon. Mr. Annalls, gardener to T. G. Shenton, Esq., staged the best green flesh. In the special class for Melons the prizes presented by Messrs. Sutton & Sons, Reading, the fruit was of capital quality; with Hero of Lockinge Mr. Ward took first honours. Peaches and Nectarines were well shown by Mr. C. Curtis, gardener to J. S. Dixon, Esq., Hollybank, Dibden, and Mr. Inglefield. Apples were a small show, but other hardy fruits were good.

Vegetables.—These were staged in large numbers and of superb quality. In the class for twelve varieties Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Glenhurst, Esher, was an easy first, and Mr. S. Wilkins, gardener to Lady Theodora Guest, Inwood, Henstridge, was second. For nine varieties eight competed. Mr. Allen carried off first honours with capital dishes, and Mr. Inglefield was second. Potatoes, Onions, Cucumbers, and especially Tomatoes were well shown. Fifteen dishes of the latter were staged in the two single dish classes set apart for them, Mr. Waite staging Perfection for the first place.

Cut Flowers.—A capital part of the Exhibition were formed by these. The first and second prize table decorations of Mr. J. R. Chard and Mr. J. Lock were simply perfect, while the bridal and ball bouquets from Messrs. Perkins & Sons, Coventry, left nothing to be desired. Roses from Messrs. Keynes, Williams & Co., Salisbury, were fresh and of rich colour and good form. Show Dahlias from the same firm were also of capital quality, being large, clean, and bright in colour. Mr. Evans staged the best stand of stove and greenhouse blooms; Messrs. Cheal and Son, Crawley, the best herbaceous flowers. Mr. F. Nutt, Rose Road, Southampton, staged the best yellow ground Carnations, very fine, while Mr. J. Peaback had the best Picotees. Messrs. Wood & Son, London, had a large display of horticultural sundries.



FRUIT FORCING.

PINES.—*Preparing Houses for Plants.*—Clean houses thoroughly as they become vacant before being again occupied with plants. Bottom heat being necessary, first attend to the beds. Whether these are of tan or leaves, the bottom heat being furnished by hot-water pipes, the whole should be removed at least once a year, or insects, particularly woodlice, rapidly increase; the old material also harbours other vermin. All brickwork must be scalded and brushed with hot lime, the wood and iron work with soap and water, thoroughly cleansed, using a brush, keeping the soapy water as much as possible from the glass, which should be cleaned inside and outside with water only. If necessary the wood and iron work may be painted, the roof being made as watertight as practicable. Beds that are chambered—i.e., the hot-water pipes covered with slate or other material, are very much in advance of those surrounded or passing through beds of rubble. Those composed of the latter should be turned over, and any dirt or small parts removed to allow the heat given off by the pipes to penetrate the whole uniformly to the bed. Provide fresh tan in other cases. If wet, turn it occasionally on fine sunny days. With hot-water pipes beneath about 3 feet depth of tan is ample, more will be needed where such aid is not obtained.

Potting Suckers Started in June.—These will soon fill their pots with roots, and must be shifted into larger pots before the roots become closely matted together. Queens must have 9 and 10-inch pots, and those of stronger growth 11-inch pots. Give water immediately after potting, and plunge in a bed having a temperature of 90° to 95°. There is no greater mistake in growing Pines than crowding young plants. They become drawn and weakly instead of having a sturdy base, a condition that should always be secured when possible.

General Remarks.—Attend to the bottom heat of beds that have been recently disturbed or upset by removing or replacing plants, not allowing the heat to exceed 95° at the base of the pots without immediately raising them, as too much bottom heat will disastrously affect plants with fruit or those having the pots filled with roots. Examine the plants for watering about twice a week, and maintain a moist, genial, well ventilated atmosphere. The climatic conditions are now so favourable that Pine plants grow luxuriantly, therefore discontinue any shading such as may have been employed for an hour or two at mid-day, when the sun was powerful through the months of May, June, and July, the plants after this having the benefit of every ray of light, admitting air plentifully when the temperature ranges from 85° to 95°, affording to fruiting plants a night temperature of 70° to 75° at night. Reserve, if possible, more suckers on the stocks for starting at the commencement of September.

PEACHES AND NECTARINES.—*Unheated Houses or Wall Cases.*—The foliage is of a dark glossy hue, and the fruit is swelling kindly, but there is less of it than usual, the result probably of the cold, wet, and sunless weather of last year. The fruit should be so disposed that it has light and air by drawing the leaves aside, and raising it by means of laths across the trellis. Secure the growths as they advance, being

careful to allow space for the swelling of the shoots. Keep the growths thin, every leaf having space for full expansion. Syringe about 7 A.M., the house having a little ventilation constantly, increasing it with the advancing temperature to 75°, or if it is desired to advance the ripening the day temperature may be 80° to 85°, but always with ventilation, and close sufficiently early to maintain that temperature, but not to raise it above 90°. Syringe again in the afternoon about 5 P.M. Timely thinning increases the size of the fruits retained, therefore thin finally as soon as the stoning is completed. One Peach to every square foot is ample, also for the large Nectarines. In small fruit we have twice the weight of stone at a great sacrifice of flesh, and in appearance and quality there is no comparison between well-fed and ill-fed fruit.

CHERRY HOUSE.—The buds are now plump; the leaves, too, will not be capable of much further effort in elaborating sap and storing it in the buds and adjacent wood, therefore any undue excitement will cause the trees to start into growth, which must be guarded against by exposing the trees to the influence of the atmosphere so far as the house will admit, which is the best means of arresting premature growth, to which the Cherry is liable when forced year after year successively. The border must not be allowed to become parchingly dry, but must have a copious supply of water, and if the trees are weak afford liquid manure. To subdue red spider give an occasional washing with the syringe or garden engine. Black aphides can scarcely keep long off Cherry trees, but the leaves and wood, from their hard texture, are not inviting to them, yet if they appear promptly use tobacco water. Trees in pots must be regularly watered and syringed to maintain the foliage in a healthy condition as long as possible.

FIGS.—*Second Crops.*—The fruit of trees started about the new year or before will have the second crop in an advanced state, and it must be thinned if not already done, reserving that at the base of the growths, which as a rule swells and finishes better than near the points. This crop must not tax the energies of the trees too severely if they are expected to afford early fruit next season. Attend regularly to thinning and stopping the shoots, train thinly, and allow plenty of space in the ties for the shoots to swell, stopping the side shoots at about the fifth leaf, but do not encourage spur growths to an extent likely to cause crowding. Afford water copiously through a good surface mulching of short manure. Nothing answers better than sweetened horse knobs. Water or liquid manure will be required according to the extent of the rooting area. The trees in narrow borders may need it every day, those in larger area corresponding thereto. They can hardly have too much water in hot weather, always provided the border is formed of sound material and the roots are active, so as to lay hold of it, and there is drainage to carry off superfluity beyond the soil's retentive power. Syringe forcibly twice a day to dislodge red spider, but with proper feeding and attention there will be no need for insecticides, though nothing seems to prevent scale, therefore remove it with a brush and a soapy solution. Figs like abundance of air; they also delight in heat and light. Admit a little air constantly, increase it early, close early with plenty of moisture, and the fruit will swell to a good size, then a circulation of air constantly will enable the cultivator to produce Figs in perfection.

Fig Trees in Pots for Early Forcing.—Syringe at least once a day, in hot weather twice, affording liquid manure at the roots, and pinching to induce a neat habit in young plants with fruitfulness. Stopping must be regulated by the vigour of the plants and the varieties. Vigorous growers will need to be more closely pinched than those of moderate growth. It is important that the trees have plenty of light, are not crowded, and are well ventilated, to solidify the growth as it is made.

MELONS.—Lately the weather has not been at all favourable for Melons. It has militated against flavour, but plants swelling their fruit have done so wonderfully well, which we mention as we think there is an advantage in slight shade during scorching weather when the fruit is swelling, which the recent somewhat dull weather confirmed very decisively. Frame Melons seem always to place house Melons at a disadvantage during June, July and August. The benefit of a bed of leaves and dung slowly but surely decomposing and evolving a continuous supply of nutriment, the plants not being coddled or stewed, having much more air, therefore have more highly elaborated juices, consequently have a firmer and deeper flesh, sweeter and more agreeable flavour than house Melons at the time named.

Late Crops in Frames.—These have set, or are setting well. Where the plants are luxuriant the growths should be kept thin, or they may refuse to set, or if setting swell indifferently. Some growers have a dread of the knife while the fruit is setting, but we do not hesitate to cut out superfluous growths whenever the necessity arises, and with the best results. Crowding tends to nothing but disaster. The blossoms do not set freely, the fruits swell badly, form large seed cavities, and are deficient in both weight and quality. Copious supplies of water are necessary about twice a week to plants swelling their fruit, with a sprinkling over the foliage at closing time, those in houses being syringed both ways in the afternoon, and good moisture maintained by damping available surfaces in the morning and at noon. Do not neglect to fertilise the blossoms daily of plants now in flower, and examine them frequently for stopping or removing superfluous growths. Keep the atmosphere dry when the fruit is setting and ripening. Maintain a bottom heat of 80° to 85°, top heat 70° at night, 75° by day artificially; in dull weather admit a little air at 75° if the day is likely to be fine, allowing the heat to rise to 80° to 85°, then admit more air, and keep it through the day at 85° to 90°, closing so as to

increase it to 90°, 95°, or 100°. A free circulation of rather dry warm air greatly improves the finish and quality of Melons when ripening.

Late Melons.—If fruit be wanted very late make a last sowing forthwith. Longleaf Perfection and Scarlet Premier are good free setting and swelling sorts, keeping some little time after being ripe. The plants for fruiting in October should be planted at once, it being important that they have a light and well heated structure with those raised from seed now.

KITCHEN GARDEN.

SHALLOTS AND POTATO ONIONS.—Both of these are serviceable, as they may be used as substitutes where Onions have failed, and they possess a flavour much valued by cooks. They are seldom injured by grubs or fail from a bad season. Our stock has reproduced itself for the last ten years, and the bulbs show no signs of degeneration. The present treatment of the bulbs consists in drawing them out of the soil, laying them on a hard surface in the sun to dry, then cleaning and storing in a dry place for the winter.

MORE VACANT GROUND WANTED.—Winter crops may still be increased, but ground for their reception is deficient in many cases, and more vacant places are still wanted. Where fruit bushes from which the crop has been recently gathered have been condemned for removal, do not allow them to remain in the ground until the winter, but clear them off at once, and if the ground is limed or manured and dug over there will then be a fine quarter for winter vegetables. The same remarks apply to exhausted Strawberry plantations.

AUTUMN SPINACH.—Spinach has not been so good during the last weeks as it was previously. It does not like hot dry weather, and this was against its free development and duration, but the time has again arrived when it will do better, and a good breadth should be sown now to furnish gatherings in September and October.

PREPARING FOR MUSHROOMS.—If a good supply of Mushrooms can be secured from October until March they will be more appreciated than during the summer when choice vegetables are plentiful, and wherever horse droppings are available their collecting should begin at once to form beds to bear in October. There is no difficulty in drying the manure now, and it will be ready for the bed by the time sufficient has been collected. If placed in an open shed or under cover anywhere and turned daily that will be sufficient. We do not approve of removing all the short straw from the droppings, but allow a good deal of this to remain, as it binds the bed together better and makes it more lasting and fruitful. If the droppings could only be collected quite free from litter we should be inclined to mix a quantity of chaff with them before making the bed. Our favourite place for beds at this time is in a shed or outhouse, and we never fail to produce Mushrooms in a position of this kind. The beds should be from 15 inches to 18 inches deep, and they cannot be made too firm. Spawn when the temperature is at 85° or 90°, and soil over as soon as it is noticed that the temperature is not inclined to rise above this. At present there are many indications of Mushrooms being plentiful in the fields during August and September, but these will all be over before the beds we wish formed now will be in a good bearing condition.

ASPARAGUS.—The season has suited this admirably. It is years since we noticed the plants so luxuriant as they are at present. Indeed, in many instances they are composed of far too many shoots, and it would be much better for the future and permanent success of the roots if the weakest shoots were cut out level with the ground where they are too crowded. This would throw extra strength into those left; and it would also enable them to mature thoroughly—a very important point not easily attainable where the stems form a dense mass.

COLEWORTS.—These are closely connected with Cabbages, but head more quickly in late autumn, are more hardy, and merit being planted freely as a useful winter vegetable. Some err in planting them too soon. We never place them out until August, and often not until quite the end of that month.

DRYING HERBS FOR WINTER.—A good and varied supply of herbs is necessary in all kitchens. They are in demand all the year round. In summer there is no difficulty in supplying what is required from the beds; but unless some are dried and stored there will be a deficiency in winter. It is the leaves, and not the flowers of herbs that are most valued, and the whole of them should be cut before they flower or seed. The most useful are Thyme, Mint, Sage, and the different kinds of Savories, and good quantities of each should be cut when dry, and be spread out in some airy place, under cover. They must not be placed in the sun, as this will cause the leaves to wither so quickly as to become brittle, and then they will readily fall. When they are so dry that they will not ferment or become mouldy, if tied together, they should be bundled and suspended from the roof of a shed or room; but they must not be used until the open air supplies are destroyed by the weather.

PARSLEY.—Some of the spring-sown beds show signs of being attacked with grub, and if this increases they may be considerably spoiled before the winter; and as it is absolutely necessary that a supply of Parsley be forthcoming, daily efforts must be made to avoid deficiencies. It is always noticeable that grubs are not so injurious in autumn as in summer, and any crop sown now is not likely to be destroyed, even in gardens where the early plants have perished, and a good quantity of seed should be sown at present. If the ground is rich, add a quantity of lime; if poor, add manure and soot, as luxuriant Parsley cannot be produced in hungry soil. This crop will be found most useful in winter, as the close young growths do not suffer so much in severe weather as the long leaves on older plants.

VARIOUS.—Since the heavy rains weeds have made their appearance

abundantly, and to prevent the kitchen garden becoming unsightly in autumn run the Dutch hoe through the soil everywhere. Now that Runner Beans are podding freely gather all off as soon as they are ready, as by allowing them to remain until the seed forms, the later pods will be severely checked. Cut Cabbages that are splitting, that the side shoots may form small heads early. Do not let Cauliflowers become too old before cutting. Keep late Peas well staked. If they once droop over they will fail to fruit freely in late autumn.

PLANT HOUSES.

French and Fancy Pelargoniums.—Plants that have hard, well-ripened wood may be pruned back closely, and stood in a frame until they commence growth. If they are syringed twice daily, and the frame closed early in the afternoon, they will soon start, and no water will be needed at their roots before they reach this stage. When they have well broken into growth the old soil may be shaken from amongst their roots and the plants repotted in a smaller size. The soil may consist of good loam three parts, one part leaf mould, one-seventh decayed manure and sand. Syringe lightly and water carefully until they commence rooting freely into the new soil. The frame may be kept moderately close at first, then admit air abundantly to insure sturdy growth. Young plants that are just rooted in small pots may be placed into 4½-inch pots. Give plenty of air from the first, but water carefully, and they will soon commence rapid growth. Cold frames are the most suitable structures for them, so that the lights can be thrown off after active growth has commenced. Good cuttings may still be inserted in sandy soil, and stood in cold frames until they are rooted.

Roman Hyacinths.—For early flowering bulbs may be potted at once. They can be placed thickly together in pots, pans, or boxes, according to individual requirements. We have found them to succeed well in equal quantities of old refuse soil from the potting shed and good loam, to which is added leaf mould, sand, and a little decayed manure. The bulbs after they are potted should be placed outside and covered with ashes, 4 inches deep. Select for them a position moderately sheltered from the sun, as when fully exposed the soil in the pots is liable to become too dry. Bulbs may be potted at intervals of three weeks until the end of October.

Snowdrops and Crocuses.—Where these are required to flower early they should be potted at once, and not delayed until October and then subjected to undue forcing in spring. Failure is certain to follow such a course of treatment. If home-grown bulbs are prepared for this purpose where they do well, and are potted now, it will be found that the pots are full of roots by the time imported roots can be obtained. These, if never removed from cold frames, will precede those outside in flowering.

Primulas.—All but the latest should be in their largest pots. Be careful to grow them on a cool moist base where they can be protected from strong sun, but where they can enjoy abundance of light. Provide ventilation most liberally to insure sturdy growth. These plants are frequently spoiled by keeping them too close; they draw up weakly, and are a prey to damp in autumn. Give the earliest plants soot water in a clear state, and a little artificial manure on the surface once a fortnight.

Double varieties should also be in their largest pots. These do better close to the glass where they can be shaded from the sun provided they stand on a bed of ashes or gravel.

Petunias.—Plants for early flowering in 5-inch pots next season may be rooted at once and then transferred to 3-inch pots. After they are rooted pinch out the points, to induce them to branch, and grow them as cool and sturdily as possible. Any good varieties from amongst the seedlings that were raised in spring may also be perpetuated by cuttings inserted at the present time. The cuttings of Petunias are liable to damp if they are placed in too warm and too close a structure. A cold frame, that can be kept shaded, will be found the best place for them.

Fuchsias.—Cuttings of these may also be inserted now, and they root freely in cool frames if dibbled thickly into boxes. They should be potted singly after they are rooted, and encouraged to make firm growth by potting them moderately firm and growing them as cool as possible.

Heliotropes.—Bushy plants in 3-inch pots may be placed into 5-inch pots and stood or plunged outside until the end of September. These, if given a light warm structure during the autumn, will flower profusely. Continue to train the shoots of standards and pyramids until they have filled their trellises with sturdy short growths. It is not wise to allow the shoots to extend any great length before they are pinched. The more shoots the plants have, the greater the number of flowers produced.

your readers. The experiment was begun in May, and ended in July. There is no water available near at hand for our bees, so they have to depend mostly upon what is given them. The quantity given each day amounted to 1 lb. 10 ozs., and allowing 2 ozs. for evaporation this leaves 1½ lb. for each stock, or about 30 lbs. for a three-weeks batch of eggs and brood.

Water is required for the secretion of wax and the building of combs, the brood, and the moistening of thick and granulated honey, as well as to keep up the necessary moist atmosphere of the hive. During warm weather much moisture is evaporated from the hive, as much sometimes as 2 lbs. in a night, but it is not confined solely to warm weather, for during the coldest the honey the bees consume is converted into carbonic acid gas and water. In the former case the great bulk of water evaporated is from the excess in the newly gathered honey, and from the natural perspiration of the bees and larvæ.

POLLEN.

It is more difficult to arrive at the exact quantity of pollen required in a hive, as it is used in conjunction with water and honey as food for the larvæ, for the seals of the brood combs, and interstices of the hive along with propolis. But perhaps at least 2 lbs. of pollen is necessary for the brood brought forward in three weeks when the queen is laying about 3000 eggs daily. Whether the above is accurate or not, I know that a strong hive will consume more than 1 lb. of artificial pollen per month during the spring. If we take the three weeks during the height of the honey season, when a strong stock will gather and store 100 lbs. of honey, and carry in 30 lbs. of water, and probably not less than 6 lbs. of pollen, and divide all these materials into globules of three-sixteenths of an inch in diameter, it will give an idea of the laborious work performed by the bee.

PROPOLIS.

This is sometimes carried in in larger quantities than the bee-keeper desires, but never to such an extent as to make it a commercial product. It is sometimes, however, useful as a cement in small quantities, and when gathered from certain trees is fragrant and agreeable.

PUNIC BEES.

It is as yet premature for me to say anything for or against the Punician bee, as I have only seen the young ones beginning to work, but strange to say at the early age of not more than six days old. Of course these young bees are crossed with a drone of the crossed Syrian, but many have the appearance of pure ones, which may be described as being of a dark plum colour with greyish hairs, and the body of a more stubby appearance than some of the other foreign races possess. I should like to know from "A. H. B. K." if this early working of the Punic bee has been observed by him. He has told us of some of the wonderful qualities of this race, but not this point, and, what is most interesting, these youthful bees were at work by 7 A.M. As desired, I have placed one of the queens at the head of a stock, and have it at the Heather, which should be in good condition for gathering honey about the middle of August, after which I will report progress. I cannot say anything definite about their temper yet, but they seem to be mild tempered, as they not only work early, but aired themselves at an earlier age than other sorts. I am favourably impressed.

AGE OF BEES.

I have frequently given my experience of having bees living in August that were hatched not later than the beginning of June the previous year. A more interesting case is now under my notice. A Syrian queen was expelled from the hive at the beginning of March, apparently healthy looking, but exhausted for egg-laying; the healthy look is evidently due to the nourishment given her by her anxious daughters. After the expulsion of the queen a Carniolian was introduced. She, also, after two months was expelled in a similar condition. Latterly one of the Punic queens was introduced, and while I write the three different races occupy the hive, showing Syrian bees that could not be hatched later than in the

THE BEE-KEEPER

NOTES ON BEES.

WATER REQUIRED BY BEES.

I HAVE concluded an experiment as to the amount of water required for the internal economy of the hives during the summer months, and it will perhaps not only interest but astonish some of

last week of April, and probably some of them were hatched in 1888. This is simply another proof of the fallacy that bees live only six weeks. It is to the long life of the bee that we are indebted for the strong hives and large yield of honey, which I hope to say something about in a future issue.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. R. Pearson & Sons, Chilwell Nurseries, and 2, Exchange Road, Nottingham.—*Catalogue of Dutch Bulbs.*

Charles Van Geert, Antwerp, Belgium.—*Trade List of Camellias, Azaleas, Trees, and Shrubs.*

Vilmorin, Andrieux & Cie., 4, Quai de la Megisserie, Paris.—*Catalogue of Bulbs, Seeds, and Plants.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Judging Picotees (*J. W.*).—Not having a schedule to guide us in this matter we cannot express a definite opinion upon it, but from what you say respecting the wording in the class and that there was no stipulation as to the varieties being distinct, we should think your decision was a correct one. The compilers of schedules are frequently to blame for misunderstandings of this kind. The conditions cannot be stated too clearly, as any kind of vagueness is misleading both to exhibitors and judges.

Grapes Scalded (*Clifton*).—The Grapes you have sent are what gardeners term scalded. The cause and prevention have often been pointed out, the latter especially, on page 54 of the issue of the 18th ult. You probably damp your vinery too late at night, perhaps have no heat in the pipes, and keep the house closed too long in the morning. Leave the top sashes open to the extent of an inch or two all night, and increase the ventilation within half an hour of the sun shining on the house in the morning. The night temperature should not fall far below 70°.

Tuberoses Unsatisfactory (*H. W. G.*).—There is always a difficulty in getting the flowers without the yellow hue, and it is peculiar to some varieties—for we find that grown in sun or in shade the flowers are often marred by the undesirable tinge, and for this reason growers of roots are careful to propagate from the purest white-flowered plants, in which direction a great advance has been made of late, that fine variety, Pearl being originated by careful selection. The Cape and American-grown Tuberoses have purer white flowers than Italian. The shade is not good, neither for the colour, the substance, nor the fragrance of the blooms. The syringing should not be practised over the flowers, but we think the chief cause of what you complain is inherent to the variety.

Crowded Spurs on Espalier Apples (*F. J.*).—With the growth too luxuriant it is not advisable to thin the spurs now, as an excess of sap would probably pass to the adjacent spurs, and push growth instead of forming fruit buds. If, however, the trees are allowed to extend, so that the sap diverted into other channels would be expended thereon, then a judicious thinning of the spurs where too crowded, removing the weakest, and gradually, so as not to cause a check, would tend to the development of the remaining spurs; but it is more advisable to wait until early autumn, when root-pruning being resorted to to check the too luxuriant growth a judicious thinning of the spurs may be practised without danger of the remainder being started into growth; arresting the growth consequent on the root-pruning tends to the maturation of the buds and wood.

Propagating Tropæolums (*S.*).—The variety Fire Ball is very good and most easily propagated. Cuttings inserted in pots of sandy

soil in August, kept moist, close, and shaded for a time to prevent flagging, will speedily emit roots. The young plants may either be potted, one in the centre of a 3-inch pot, or three round the sides of a 4½-inch, or they may remain in the store pots until spring. A shelf in a greenhouse from which frost is excluded will be suitable for them in the winter. When growth commences in the spring the plants may be topped and the cuttings rooted in heat, any required number being provided in a very short time. Until the cuttings are rooted the soil must be constantly moist, but in winter only sufficient water should be given to prevent flagging. Avoid, however, mere surface sprinklings while the roots may be dry below, or the plants will inevitably decay. Choose short-jointed firm growth for cuttings, which may be about 4 inches long, pinching out all flower buds as they appear after the cuttings are inserted.

Hybrid Perpetual Roses for Cutting (*H. R. W.*).—Omitting those you name—viz., La France, Gloire de Dijon, Général Jacqueminot, and Souvenir de Malmaison, we think the following will meet your requirements:—Alfred Colomb, Baionne de Rothschild, Boule de Neige, Brightness of Cheshunt, Charles Dickens, Charles Lefebvre, Countess of Rosebery, Duchess of Bedford, Duke of Albany, Duke of Connaught, Earl of Pembroke, Fisher Holmes, Grand Mogul, Harrison Weir, Jean Liabaud, Louis Van Houtte, Magna Charta, Maréchal Vaillant, Marquise de Castellane, Marquise des Ligneris, Mrs. Baker, Mrs. John Laing, Pierre Notting, Prince Arthur, Sir Garnet Wolseley, Ulrich Brunner, Madame Victor Verdier, John Hopper, François Michelon, and Sénateur Vaisse. Those are all good and free. Others that you may add are Auguste Neumann, American Beauty, Brilliant, Charles Darwin, Comtesse de Mortemart, Countess of Pembroke, Dupuy Jamain, Edouard André, Emily Laxton, George Baker, Abel Carrière, Marchioness of Exeter, Lord Frederick Cavendish, Monsieur E. Y. Teas, Sénateur Favre, Souvenir de Madame Alfred Vy, Reynolds Hole, Marshal P. Wilder, Mdlle. Marie Rady, and Madame Lacharme.

Young Peach Trees (*A. B.*).—The young trees planted last November having made shoots of 5 to 6 feet in length, and being firm and short-jointed, will probably ripen to the extremity; but if there is any doubt of this—the tree having a tendency to late growth and consequent imperfect ripening of the wood—it would be advisable to take out a trench about a foot further from the stem than the roots extended at the time, taking it out below the roots, and leaving it open for about a fortnight, when it may be filled in again, and firmly. This should be done after the wood becomes somewhat firm, from the middle to the end of September being a suitable time for trees in a cool house. If the foliage becomes limp it may be necessary to give water after the trench is taken out to prevent severe flagging, otherwise the foliage may ripen prematurely; but the soil should be kept rather dry, so as to induce ripening, yet with sufficient moisture to ensure the plumping of the buds. With the wood ripe the shoots should not be cut back, unless it be necessary to originate others for furnishing the trees, and then it is best done in spring, when the buds commence swelling. The pyramid trees planted out are manifestly making too much wood. We should cut a trench around them 9 to 12 inches beyond the previous extension of the roots, and as deep as they extend, and leave it open for a fortnight, as above advised, which will check the growth and induce ripening and the maturation of the buds. Pinch the laterals to one joint, and to one of subsequent growth, entirely taking out the point of the shoots at the 18 inches of growth or not stopping, if the shoots have formed the terminal bud—i.e., ceased growing. Admit air moderately in the day, so as to secure a good sun heat, and ventilate to the fullest possible extent at night. This will tend to ripen the growth and induce the formation of fruit buds. If the trees are clean and healthy there is no reason why they should not fruit well another season.

Manure for Strawberries and Cherries (*G. G.*).—Soil that is well drained and enriched with manure from a farmyard, pigstye, cowshed, or stable answers fairly well for Strawberries if it be shallow or deep. The plants, however, soon become exhausted in shallow soil under ordinary conditions of culture, and are only to be retained in full vigour by heavy annual dressings of manure dug in between the rows as soon as the fruiting season is at an end, and by copious waterings of sewage or other liquid manure during the season of growth. In many gardens the available supply of solid manure is so limited that none can be spared for the Strawberry bed; sewage of which every householder has a regular supply then becomes our substitute, the soil between the rows being broken up when the fruit is done, just as it would be if we had manure to dig in, and then the sewage is poured over it frequently till growth ceases in autumn. If planted carefully Cherries answer in soil of ordinary fertility, such as will produce good vegetables without any subsequent addition of manure; sewage, however, may always be given with advantage before the blossom expands and while the fruit is swelling. In poor thin soils stations must be made for the trees, each station being 6 feet square and 2 feet 6 inches deep. Lay a drain of common 2-inch land drain pipes across the middle of the bottom of the hole, and connect it with the nearest branch or main drain to render the roots safe from any accumulation of stagnant water, then cover the bottom of the station with 6 inches of broken brickbats, stones, or clinkers—9 inches would not be too much in a wet low situation—and then fill the hole with rich sweet loam, in which plant the tree. If when the hole is made you find a substratum of gravel there will then be no occasion to use either broken stones or drainpipes, as all superfluous water is certain to pass away quickly. Careful planting involves close attention to details, and that is why we allude to them here. But Cherry trees are

apt to flourish for a few years and then become barren, sickly, and not unfrequently die outright; they must, therefore, be watched closely, and prompt attention be given to the slightest indication of debility, which undoubtedly arises most frequently from exhaustion. The station once abounding with fertility has become sterile, the roots having ramified in it till it has become permeated with them in every direction and lost all its goodness. The remedy is obvious. Make a trench 2 or 3 feet wide and 2 feet deep around the station, fill it with soil similar to that used for the station, and feed the roots with sewage until they have entered the new soil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. B.*)—A light coloured variety of *Crinum longifolium*. (*R. S.*)—1, *Lythrum Salicaria*. 2, *Chrysanthemum segetum*. 3, *Lilium chalcidonicum*. (*M. Croydon*).—1, *Linaria Cymbalaria*, the Ivy-leaved Toadflax. 2, *Epilobium angustifolium*. 3, *Asplenium cicutarium*. 4, *Adiantum tenerum*. (*A. B.*)—1, *Begonia ferruginea*. 2, *Polystichum aculeatum*. 3, *Adiantum pedatum*. 4, *Dracena congesta*. (*A. S.*)—*Oncidium leucophilum*. (*J. C.*)—The specimen is too imperfect to permit the determination of its specific name, but the portion of a flower received seems to be a *Catasetum*.

COVENT GARDEN MARKET.—AUGUST 7TH.

Market quiet owing to the holidays.

FRUIT.

	s. d.	s. d.		s. d.	s. d.				
Apples, $\frac{1}{2}$ sieve	2	0 to 4	0	Oranges, per 100	4	0 to 9	0		
„ Nova Scotia and ..				Peaches, dozen	3	0	12	0	
„ Canada, per barrel ..	7	0	16	0	Red Currants, per $\frac{1}{2}$ -sieve	3	6	4	0
Cherries, $\frac{1}{2}$ sieve	6	0	12	0	„ Back	5	0	5	6
Grapes, per lb.	0	9	2	6	St. Michael Pine, each	2	0	8	0
Lemons, case	10	0	15	0	Strawberries, per lb.	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, dozen ..	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle ..	2	0	5	0	Mushrooms, punnet ..	0	6	1	0		
Beans, Kidney, per lb. ..	0	3	0	6	Mustard & Cress, punnet	0	2	0	0		
Beet, Red, dozen ..	1	0	2	0	New Potatoes, per cwt. ..	8	0	9	0		
Broccoll, bundle ..	0	0	0	0	Onions, bushel ..	3	0	4	0		
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	Parsley, dozen bunches	2	0	3	0		
Cabbage, dozen ..	1	6	0	0	Parsnips, dozen ..	1	0	0	0		
Capicums, per 100 ..	0	0	0	0	Potatoes, per cwt. ..	4	0	5	0		
Carrots, bnunch ..	0	4	0	0	" Kidney, per cwt. ..	4	0	8	0		
Cauliflowers, dozen ..	2	0	4	0	Rhubarb, bundle	0	2	0	0		
Celery, bundle ..	1	6	2	0	Salsify, bundle ..	1	0	1	6		
Coleworts, doz. bunches	2	0	4	0	Scorzoneria, bundle ..	1	6	0	0		
Cucumbers, each ..	0	3	0	6	Sballots, per lb. ..	0	3	0	0		
Endive, dozen ..	1	0	2	0	Spinach, bushel ..	3	0	4	0		
Escarots, bunch ..	0	2	0	0	Tomatoes, per lb. ..	0	6	0	0		
Leeks, bunch ..	0	8	4	0	Turnips, bunch	0	4	0	0		

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.				
Arum Lilies, 12 blooms ..	2	0 to 6	0	Marguerites, 12 bunches	2	0 to 6	0		
Asters (Fr.), per bunch ..	0	9	1	6	Mignonette, 12 bunches	1	0	3	0
Bouvardias, bunch ..	0	6	1	0	Myosotis or Forget-me-nots				
Cactus dozen blooms ..	0	0	0	0	doz. bunches	1	6	4	0
Carnations, 12 blooms ..	1	0	2	0	Narcissus (various) ..	0	0	0	0
" 12 bunches ..	3	0	6	0	Pansies, dozen bunches ..	1	0	3	0
Clove Carnations, 12 bunches	5	0	8	0	Pelargoniums, 12 trusses	0	6	1	0
Cornflower, doz. bunches	1	0	4	0	" scarlet, 12 bunches	2	0	5	0
Eucharis, dozen ..	2	6	5	0	Pæonies, dozen blooms ..	0	0	0	0
Gardenias, 12 blooms ..	2	0	4	0	Pinks (various) 12 bunches	3	0	6	0
Gladioli, per bunch ..	0	6	1	6	Polyanthus, doz. bunches	0	0	0	0
Gladioli brenchleyensis,					Roses (indoor), dozen ..	0	6	1	6
dozen sprays ..	1	0	1	6	" Mixed, doz. bunches	3	0	6	0
Iris, dozen bunches ..	4	0	9	0	" Red, dozen bunches	4	0	9	0
Lilac, White (French),					" 12 blooms ..	0	6	1	0
per bunch ..	0	0	0	0	" Tea, white, dozen ..	1	0	3	0
Lilium auratum, 12 blms	2	0	4	0	" Yellow ..	2	0	6	0
Lilium candidum, 12 blms	0	0	0	0	Spiræa, dozen bunches ..	0	0	0	0
Lilium longiflorum, 12					Stephanotis, doz. sprays	2	0	3	0
blooms ..	2	0	5	0	Stocks, dozen bunches ..	3	0	6	0
Lapageria, 12 blooms ..	1	0	2	6	Sweet Peas, doz. bunches	2	0	4	0
Maidenhair Fern, doz.					Sweet Sultan, " "	3	0	4	0
bunches ..	4	0	9	0	Tuberose, 12 blooms ..	0	6	1	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Aralla Sieboldi, dozen ..	6	0	to	12	0	Fuchsia, per dozen ..	4	0	to 9	0
Arum Lilies, per dozen ..	0	0	0	0	Geraniums, Ivy, doz. ..	3	0	5	0	
Arbor vitae (golden) dozen	12	0	24	0	Hydrangea, per dozen ..	9	0	18	0	
Asters, 12 pots.	4	0	6	0	Lobellias, per dozen ..	3	0	6	0	
Begonias, various, per doz.	4	0	12	0	Marguerite Daisy, dozen	6	0	12	0	
Balsams, per dozen. . . .	3	0	6	0	Mignonette, per dozen ..	3	0	6	0	
Caladiums, per doz. . . .	9	0	18	0	Musk, per dozen	2	0	4	0	
Calceolaria, per dozen ..	4	0	8	0	Myrtles, dozen	6	0	12	0	
Christmas Rose	0	0	0	0	Nasturtiums, per dozen ..	2	6	4	0	
Cineraria, per dozen .. .	0	0	0	0	Palms, in var., each ..	2	6	21	0	
Cockscombs, per dozen ..	3	0	6	0	Pelargoniums, scarlet, 12	2	0	4	0	
Dracena terminalis, doz.	24	0	42	0	Pelargoniums, per dozen	4	0	9	0	
Dracena viridis, doz. . .	12	0	24	0	Rhodantbe, per dozen ..	3	0	6	0	
Erica Cavendishii, doz. .	0	0	0	0	Saxifraga pyramidalis,					
Euonymus, var., dozen	6	0	18	0	per dozen	0	0	0	0	
Evergreens, in var., dozen	6	0	24	0	Spiræa, per dozen	0	0	0	0	
Ferns, in variety, dozen	4	0	18	0	„ palmata, per doz.	0	0	0	0	
Ficus elastica, each .. .	1	6	7	0	Stocks, per dozen	0	0	0	0	
Foliage plants, var., each	2	0	10	0						



POSSIBLE IMPROVEMENT.

THAT the depressed agriculturist is a much advised man is very true, but it is equally true that much of the advice showered upon him is not at all good or worthy of attention. No doubt a certain amount of failure and bankruptcy have followed in the train of depression; that was inevitable, because in every class there are individuals so devoid of originality as to be quite unable to rise to an emergency or to grapple with and overcome difficulties of a novel character. This has been the case of many farmers during the last decade. Most of them were probably very worthy men, perfectly industrious, sober, and honest, and doing their utmost to stem the tide of failure which swept over their affairs with a force that they were unable to resist. Evidence of such failures has been and is still present with us in the numerous vacant farms that have fallen upon the hands of landlords. This is indeed stern reality, and we do well to inquire were the failures inevitable, and could not they have been avoided?

Not by any means difficult is it to answer that they were inevitable in almost every instance, simply because of the ignorance and incapacity of the sufferers. Most of them had been corn growers all their lives, other branches of farming received little attention from them, and when corn fell in value they continued growing it for the simple reason that their habits were fixed and they could turn to nothing else. Meanwhile the demand for dairy produce was steadily increasing, complaints of the inferior and changeable character of home made butter were loud and general, the foreign producer saw and seized his opportunity, and the butter merchants' demand for a regular and adequate supply of butter of a high and fixed quality was ably met by the farmers of the Continent, Denmark taking the lead, followed by France, Germany, and Holland. Importations from other countries are also considerable, the total amount lost to the British farmer in 1888 for this article alone being £8,902,193. We may as well add to this £4,542,278 for cheese, and £3,077,109 for eggs, or a grand total of £16,521,580 paid to the foreign producer in 1888 for three articles of farmyard produce, most of which might just as well have been expended upon home produce, and doubtless would have been had it been forthcoming in suitable condition to command the markets. But we have supinely suffered the foreigner to wrest so large a portion of trade from us, and he will not lightly be driven from the field now. To compete with him we must offer a first class article at low rates, see that the quality is of uniform excellence, guarantee a regular supply, and so strive to establish a feeling of confidence between producer, salesman, and consumer. It is upon such principles that trade is built up and business connections formed; the farmer's part in it is surely patent enough.

Perhaps the most striking proof of the truth of these remarks may be found in the failure of so many Essex farmers. Close to the huge metropolis, with the endless wants of its teeming millions, this home county should be one of the most prosperous in the kingdom. This self-evident fact induced Scotch farmers to turn their attention to it. They found plenty of vacant farms offered at very low rents within twenty miles of London, and they hired them. But instead of attempting to grow corn almost all the land was brought under a system of alternate husbandry, and laid down in temporary pasture for at least four years, and at the end of that time, if the layers appeared sound, they were left for another two years. The expenditure for labour was thus kept down from the first, milk and hay found a ready sale in London, any quantity of London dung was available for the land, so that the poverty

brought upon it by a generation of bad farming could soon be corrected. Thus by the exercise of sound judgment, industry, economy, and thrift, the new tenants are successful and prosperous. They adapt themselves to circumstances, cause their farms to serve local requirements, produce articles for which there is a speedy sale, a sure and profitable return. The price of milk is undoubtedly low, but they contrive to make it pay; and even where cows are not kept for milk the farmers are prosperous, for it need not be questioned that men so alert and keen would turn their holdings to account for every crop that bids fair to be profitable.

We may be told that all farmers could not meet their difficulties in this manner; and we agree. But they could assuredly do better everywhere than continue using all their land for the cultivation of corn. It is that of which we complain, and we have done so to good purpose among the tenants of small farms, who, if only they can be induced to see that their interest lies in the production for sale of mutton, pork, poultry, and dairy produce, rather than corn, are quite certain to be prosperous if they conduct their business with due care and skill. They may grow some corn, but most of it should be for home consumption by the animals of the farm.

WORK ON THE HOME FARM.

Recent showers have done much to ensure the safety of late Swedes and white Turnips. The rain has also done much good to early roots and all green crops. Thousand-headed Kale and Cabbages are full of vigorous growth, especially where a dressing of nitrogenous manure had been applied before the rain, which dissolved and washed it well down to the roots. An abundant store of fodder and roots is now certain for use next winter, and all who can hold over the lambs for hoggets should do so, both in view of profits from them and for the sake of the land, a large proportion of which ought always to be folded with sheep every year. When lambs are purchased as stores for hoggets it should be done with a clear grasp of one's intention, for without a definite purpose it is easy to make a mistake. If, for example, we require hoggets to go out to the butcher before Christmas, then we should secure forward lambs which have been well fed; and we must continue the use of lamb food, Waterloo cake, or crushed oats and peas or beans. But if hoggets are not to be finished till next spring, then lambs which have not been forced on by high feeding will be best; and they will require nothing besides grass at present. The appearance of forward lambs in high condition is so tempting that it is quite necessary to caution beginners about the purchase of such animals, for if the high-feeding is not continued there is a speedy falling off in condition, involving much vexation and a certain loss.

Harvest will now soon be general, for all corn has ripened very fast, and not a day must be lost in saving every crop as it becomes ready. Much Wheat had the grain ready for reaping while yet the straw was quite green, and there is so strong a growth of weeds or layers among the straw that some caution is necessary. Before all things the corn must be saved; and it will not answer to leave it so long as to run risk of its being shaken out of the ears. As a rule Wheat should be reaped as soon as the grain becomes so far matured as to yield no juice when squeezed hard. Barley must be left till quite ripe, and then it cannot be got to the stack too quickly. The test for Oats is precisely similar to that for Wheat, and early cutting is advisable, as ripe Oats are easily shaken out of ear. Beans may be cut when the leaf begins to fade, and the beans become "black-eyed." Peas should always be cut quickly after the seed is fully developed, and be laid in thin wads to facilitate ripening and turning.

THE CROP REPORTS.

THE reports on the crops which we publish to-day (August 5th), taking them all round, are about the most favourable which it has ever been our pleasure to chronicle. They were collected between July 26th and August 1st. The abstract tables given below represent the crops of England only, and we believe that the figures we give fairly indicate their general condition:—

CORN CROPS, 1889.

	Wheat.	Barley.	Oats.	Beans.	Peas.
Over average ...	100	51	58	27	26
Average ...	83	100	97	42	54
Under average ...	18	49	56	56	37
Total ...	206	200	211	125	117

PERCENTAGES, 1889.

	Wheat.	Barley.	Oats.	Beans.	Peas.
Over average ...	48.6	25.5	27.5	21.6	22.2
Average ...	42.7	50.0	46.0	33.6	46.2
Under average ...	8.7	24.5	26.5	44.8	31.6
	100	100	100	100	100

HAY, POTATOES, AND ROOTS, 1889.

	Hay.	Potatoes.	Turnips.	Mangels.
Over average ...	137	102	93	82
Average ...	22	63	88	73
Under average ...	1	15	17	31
Total ...	210	180	203	186

	PERCENTAGES, 1889.			
Over average ...	89.0	56.7	43.3	44.1
Average ...	10.5	35.0	43.3	39.2
Under average ...	0.5	8.3	8.4	16.7
	100	100	100	100

It will be seen that the figures represent all the crops except Beans and Peas as more or less generally above average, while Peas are not very much below. In fact, we may say that, approximately, our returns represent Barley, Oats, and Peas as average crops, Beans as under average, and all the other crops as considerably above the ordinary standard.

A comparison of this year's tables with those of last year, given below, will show the great superiority of the present season in general productiveness:—

CORN CROPS, 1888.

	Wheat.	Barley.	Oats.	Beans.	Peas.
Over average ...	15	86	75	45	35
Average ...	49	109	100	55	53
Under average ...	164	52	75	77	89
Total ...	228	247	250	177	177

	PERCENTAGES, 1888.				
Over average ...	7	34.8	30	25.4	19.8
Average ...	21.5	44.1	40	31.1	29.9
Under average ...	71.5	21.1	30	43.5	50.3
	100	100	100	100	100

HAY, POTATOES, AND ROOTS, 1888.

	Hay.	Potatoes.	Turnips.	Mangels.
Over average ...	140	128	130	88
Average ...	68	54	83	85
Under average ...	53	55	39	61
Total ...	261	237	252	234

	PERCENTAGES, 1888.			
Over average ...	53.6	54.0	51.6	37.6
Average ...	26.1	22.8	32.9	36.3
Under average ...	20.3	23.2	15.5	26.1
	100	100	100	100

Barley and Beans are the only crops which come out worse for 1889 than for 1888, while all the other crops show up considerably better. The comparison is most quickly made by noticing the percentages of under-average returns for the two years. As usual, there is more doubt about the root crops than any others, for the simple reason that they have not nearly arrived at maturity at this season of the year; but we take it to be a good sign that our correspondents express much less hesitation in estimating these crops on the present occasion than they expressed last year.

Farmers in the early districts have enjoyed splendid weather for the beginning of their harvest, and we hope that this is but an earnest of what is to follow.—(*The Agricultural Gazette*.)

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1889.		Baromet- ter at Sea and Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
July and August.			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	l.	
S unday	24	30.172	63.8	56.0	N.	58.8	72.1	50.4	1.8.9	47.4	—	
M onday	29	30.103	63.5	57.9	N.	60.0	75.9	54.9	12.4.4	53.2	—	
T uesday	30	30.46	67.6	62.5	E.	61.1	75.3	57.4	9.7.8	72.9	—	
W ednesday ..	31	30.123	69.1	62.2	S.	61.9	74.4	53.3	12.0.0	47.7	—	
T hursday	1	29.964	70.2	65.0	E.	61.9	84.4	57.7	12.5.9	53.2	—	
F riday	2	29.933	66.4	60.0	S.W.	62.9	75.9	57.5	12.4.3	54.3	0.120	
S aturday	3	29.864	60.8	61.4	N.	63.0	87.7	59.1	8.5.5	57.9	0.136	
		30.035	65.8	61.7		61.2	75.8	51.2	11.3.8	52.4	0.256	

REMARKS.

28th.—Fne bright day; spots of rain in evening.
29th.—Dull early; fine day, but close, especially in afternoon and evening.
30th.—Dull early; bright warm day.
31st.—Bright and warm.
1st.—Warm, hazy, and oppressive.
2nd.—Fine, and generally bright.
3rd.—Wet from 3 A.M. to 1 P.M.; fine, and frequently bright in afternoon.
A week of warm summer weather. Temperature 6° above that of the preceding week and 4° above the average.—G. J. SYMONS.



POTATOES FOR PLANTING.

GARDENERS in the exercise of their calling must look well ahead, and in no one particular is this more necessary than in the case of saving Potatoes for planting during the next season. In most instances a considerable portion of the kitchen garden has to be devoted to Potato culture, and whether the crop prove a success or not very much depends upon the quality of the sets used. If they are of all sizes, some of necessity being cut and others perhaps being really too small to plant, an uneven weakly haulm is almost certain to result. Sometimes very slightly diseased tubers are saved, and these do not decay till after they are planted and have formed some very weakly haulm. The greatest and most generally repeated mistake is the practice of saving all the crop in one heap, the largest tubers being used as required and the remainder planted. When the "ware" Potatoes are thus stored with the planting sets the former must be covered and otherwise favoured at the expense of the latter, frequent exhaustive sproutings being the inevitable result. It cannot be too often impressed on the minds of the inexperienced that a tuber intended to be planted in the next season ought not to produce but one, or at the most two, strong sprouts, these being short and firmly attached to the set when it is put out. The loss of the first strong sprout is not of so much importance, though it should be prevented, if possible, in the case of most of the round varieties; but when the Ashleaf and Lapstone sections in particular are caused or allowed to sprout prematurely this has a most weakening effect, and a light crop is almost certain to be the result of this careless treatment.

Whether or not "a change of seed always pays" it is not my intention to discuss, and will merely remark that, according to my experience, it is not generally so advantageous a measure as some would have us to believe. I have hitherto found our own well selected and properly cared for sets answer better than any brought from a distance, the new varieties especially rarely succeeding satisfactorily the first season they are tried. Our practice therefore is to save as many planting tubers as we can find room for, or ample for our purpose, and to keep these apart from the ware or those intended for consumption. All are sorted over according as they are lifted, the smallest finding their way to the labourers' pigs, the medium-sized being selected for planting, and the rest stored for either boiling or baking, the larger sizes being much in demand for the latter purpose. Although we do not save very rough tubers for planting, I do not attach very much importance to the theory that the finest crops of Potatoes are to be obtained from the best formed tubers, as it frequently happens that the latter produce a great per-centage of malformed tubers, and on the other hand I have seen abundance of Potatoes fit for exhibition result from rough sets. Much in either case depends upon the nature of the ground, the manure used, and the cultivation accorded. What I wish most strongly to urge is the necessity for saving abundance of planting tubers that will not require to be cut, unless to hasten decay, so as to be well prepared for the next planting season.

Especially is it wise to save plenty of the best early Ashleaf varieties, as these can only very rarely be bought so good as they can be saved on the place, whereas most of the later varieties, in addition to being cheaper, are, as I have shown, not so much weakened by the loss of first sprouts consequent either upon thick storing or travelling. One reason why the invaluable Ashleaf

varieties are not more largely grown by amateurs generally, as well as those in charge of numerous small gardens, is the fact of the seed being both scarce and dear. Where double-cropping must be closely resorted to the Ashleafs are particularly valuable, these forming comparatively little haulm, and in addition mature early. Instead, therefore, of using these up so closely as usual let me advise that a much greater proportion of tubers be saved for planting, and when once matters are got into a good working groove there will be, disease permitting, less need of self-denial when the time again comes round for lifting and storing.

I believe there are fewer collections of Potatoes grown than formerly, and that, too, in spite of the great increase in the number of varieties available. This is as it should be, for collections as a rule are unprofitable, only the enthusiast tolerating them. In addition to causing much extra labour a constant change on the table is anything but pleasing to those who rightly prefer to have a long succession of the best variety in season. It is, however, only by repeated trials that the varieties best adapted to any particular soils can be found, but when these few are selected—for after all that may be said or written there are only a limited number of gardens where a considerable number of varieties succeed satisfactorily in every way—let the rest be discarded. We find it pays best to grow only a few varieties, and these most extensively. The weeding out should be done now, and not after the sets have cumbered the store room all the winter.

Not a few planting sets are forked out of the ground quite sound only to take the disease while laying on the surface, either to dry or, worse still, in order to conform to the fallacy that "greening" is either necessary or beneficial. Greened tubers may be stored apparently sound, yet with the disease in them, and as previously pointed out, may even be planted without its being detected. Those who are wise will not trouble to first green their tubers prior to storing, but will get them under cover as quickly as possible, especially if the weather is dull and showery. There are so many diseased Potatoes this season that it will hardly be possible to avoid storing a few of them, and there is all the more reason therefore to avoid courting disaster. It is when the tubers are newly lifted they are most susceptible of disease, and there is little danger of their taking it in airy open sheds or rooms where they are placed for the winter. If kept rather close, or in large heaps, the Ashleafs especially will sprout badly long before midwinter, and all ought to be stored as thinly as possible; a single layer, whether in shallow boxes, trays, and baskets, or in latticed benches, is all that should be formed. The sooner the Ashleafs are set on end, thickest end uppermost, the better. This, however, is work for wet weather, and may safely be deferred for a few days or weeks.

—W. IGGULDEN.

SEASONABLE NOTES ON TOMATOES.

A GROWER in Wales told me one day last week that last year he sent 30 tons to market, and at present he had every prospect of increasing this during 1889 to 40 tons. Ten years ago Tomato culture was an unheard-of experience in the garden in question. The owner further said he could readily dispose of 100 tons a year, and that he knew one salesman who would contract for the whole at an average of 1s. a lb.

The Tomato disease fortunately is far from general, but when once it is established in a place it is difficult to eradicate. Not having to contend with it I have no opinion of my own to offer as to its removal, but a friend recently informed me that he had to deal with a very bad case, so bad, indeed, that his resolution was either to kill or cure, and he thinks he has effected the latter by very stringent means. The house was a large one, over 100 feet in length, and a quantity of sulphur was placed in saucers along the gangway. The sulphur was kindled and allowed to burn until the house was so full of fumes as to compel the exit of those in

charge. They took the dishes with them and allowed the fumes to escape through a closed house, and from that day the plants have made fresh leaves which have shown no trace of being diseased. The fruit formed previous to this operation continued to swell, and much of it has since been sold at 1s. 6d. a lb. I can rely on the testimony of my informant, and the plan is so simple and effective that it may be tried wherever necessary.

In June last we had a good crop of Tomatoes on the back shelf of a Pine house. The distance from the soil until they touched the glass was not more than 3 feet 6 inches, and being well in the light they naturally produced a thickly formed crop, but I could see we should not secure many more from them after they came in contact with the glass, and when the fruit had been secured up this length the plants were cut down to the ground or soil, but they soon emitted fresh growths. One of these was allowed to grow up from each root, and at the present time they are bearing as good a crop as in the first instance. They were not stimulated until the fruit had formed the second time, as to have done this at first might have induced the wood to be long-jointed and sterile, but since the fruit appeared they have been top-dressed, and this has given them additional strength.

Not knowing what the summer of 1889 was likely to be, wet or dry, dull or sunny, and having a lively recollection of the complete failure of the open air Tomatoes in 1888, we prepared to avoid this again by having some robust plants in 10-inch pots by the end of May, and these were plunged at the bottom of the fruit walls, and the shoots tied up to the wall. These produced ripe fruit by the middle of July, and would have done so before the end of the season in spite of the weather, but others were planted out in the usual way, and although they have not produced ripe fruits they are bearing quantities of green ones, and indicate that they will soon prove remunerative, and from all I can see and hear this will soon be the case with open air Tomatoes generally. The warm weather during the hay harvest suited them admirably, and they will benefit by it to the end of the season.

I am of opinion, however, that the failure of Tomatoes in the open air is very often neither the fault of the weather nor of the plants, but is directly produced by the neglect of the cultivator. I have known many cases where considerable attention was devoted to raising the plants, or a good deal of expense incurred in buying them, and they were planted out with an amount of care which suggested that they would have proper attention throughout, but before a ripe fruit had been gathered the plants had become crowded with superfluous growths. An instance of this kind came under my notice in two different gardens in Carmarthenshire last week; many of the shoots were carrying fruits, but they were small and deformed for want of air, and, in short, a capital crop had been ruined. Their owners were under the impression that once planted they had only to wait a little while and then begin gathering the fruit. They were sorry for their mistake, and would have done all possible to rectify it; but although they might have thinned the shoots and trained those remaining so as to expose them fully to the sun and air, the plants would fail utterly to produce the satisfactory crops they most assuredly would have done had they been trained from the first.

Those who complain that their open air Tomatoes are in danger of failing must see at once that they are not suffering from the same cause, and the evil should be rectified as far as possible without a day's delay. It is better to have one or two dozen good fruits from a plant than try to have scores which never become really fit for the table. Large size and fine form are not the only points necessary to constitute a perfect Tomato, as flavour is the most important point of all, and those who care to test a few varieties in this respect will be astonished at the excellency of some and the deficiency of others. As to very late Tomatoes they can only be secured in fine condition under glass, and if cuttings are rooted now, grown in pots, and placed in warm corners in October in much the same way as the earliest plants are treated, there need be no scarcity of fruit of the best description until Christmas or much later. We all know the trouble that many take to secure late or winter Cucumbers, but Tomatoes might be secured at the same time with much less expense and anxiety, and they would be more valuable in the market, and equally as much appreciated on private tables. It certainly does not pay to keep old Tomato plants until the last fruit has been gathered, and if they were cleared out when nearing the end young vigorous plants would soon afford another supply.—J. MUIR, *Margam Park, S. Wales.*

THE SHIRLEY POPPIES.

A WISE man once said there was nothing new under the sun, a statement that often contains more truth than appears on the surface at first glance. Although the Shirley Poppy cannot, per-

haps, be traced back to the reign of that distinguished monarch, I can at least trace one back for a quarter of a century that is so much like it as to make no difference, unless it be that I consider it superior to the Shirley strain, inasmuch that they not only represent every shade of colour as the Shirley ones, but many of them are as full hearted as a Rose. I first saw it about five years ago in a garden in Scotland. The lady told me she had gathered the seed two years previously in a churchyard in Spain, and in consequence called them "Spanish Poppies," and was most particular that no one should get seed of them, so that she would have something in her garden that no one else had, something at once the delight and the envy of friends and visitors. I was very much surprised, on account of this conservatism, to find the same Poppy blooming in the garden of a farmhouse on the estate, on the opposite side of the river certainly, but within a mile of the lady's garden! Being interested in the matter I inquired of the farmer how he came by the Spanish Poppies. He said "Spanish?" we call them Australian, having had the seed originally from a friend of ours out there some one and twenty years ago, and have always saved a pinch of seed annually ever since."

I sent a pinch of seed to a leading firm of London nurserymen last spring for comparison with the Shirley, and they write me that while the foliage differs slightly, and some of the petals are spotted black at the base, they cannot otherwise observe any difference between the two strains. At the same time I ought to state that the seed I sent them does scant justice to their true beauty, as a hen with a brood of chickens had nearly deprived me of Poppies, seed and all.

Of course the fact that there was one in existence does not detract one iota from the credit due to the Rev. W. Wilks for bringing his one before the public.—H. C. W.

PRUNING OR NOT PRUNING FRUIT TREES THE FIRST YEAR.

MR. GEORGE BUNYARD is a busy man, but if he was busier between March and July, the period elapsing before his reply to my remarks on the above subject, than I have been since that reply appeared on page 16, July 11th, I should be sorry for him if the pressure were not to his advantage. I hope he may have sufficient leisure now to read my somewhat tardy rejoinder. The remark to which I took exception in Mr. Bunyard's generally excellent paper read at Chiswick last October was this, "No Apple should be pruned the first year of planting." It was a precise dictum without any qualification, and as such I was unable to accept it. Nor am I now. I said in my article I could understand particularly well rooted standard Apples, such as Mr. Bunyard I thought had in view, growing well without the previous summer shoots being pruned, but I could not nor cannot see how it is possible for trees of a contrary character—that is, those with large tops and few roots, of which I have seen so many planted—to grow as well, or nearly as well, as if the shoots were shortened in somewhat the same proportion as the roots were in the process of removing them from the ground. Thus I made an exception, but Mr. Bunyard made none, though in his reply to my observations he now makes exceptions, and the fact of his doing so proves, if not the necessity, the reasonableness of my original dissension.

I have not the least doubt that when Mr. Bunyard advises on trees of his own raising, or of others which he examines, his advice will be good; but when he was speaking at Chiswick his remarks applied to all trees, ill or well rooted, that were to be planted during the then ensuing season; and laid down the rule simple, forcible, and inflexible, that "no Apple" should be pruned the first year of planting. In the discussion in this Journal he had one adherent, a very good one I readily admit, in Mr. Arthur Young, but I am not prepared to admit that his experience is greater than that of the majority of others who took a different view of the case. With one exception the gardener having perhaps, as such, the greatest experience of all of us (Mr. G. Abbey). I have seen the trees on which their remarks were founded. I do not include Mr. Kruse in the category of gardeners, but judging by his writings he is a most careful and successful fruit grower, whose plantations I hope some day to see. There may be trees in Kent that equal at the same age some of those referred to which were pruned the first year, but I have not seen them, though I have seen thousands in the famed county.

The thrifty orchard to which Mr. Young pointed as evidence of the soundness of non-pruning the first year he did not plant. I saw the trees before he did, and they were good at the top and no doubt at the roots, for I believe they were from Messrs. Smith's of Worcester; and further, if my memory is not wholly at fault,

some at least of the strong shoots were shortened the first year. Mr. Young may have planted other trees since; but be that as it may, and however well they have grown, his experience of necessity falls short of that of others on which I am content to rely in support of my own, which is not so short, perhaps, as I could wish in this pleasant world full of pleasant friends, of whom Mr. Bunyard and Mr. Young are among the most esteemed.

I think it was in 1847 when I saw the first experiment made for testing the question of pruning and non-pruning the first season; and the last was during the present year. I cannot say how many times I have tried the two methods during the interval of forty years, but often enough to satisfy me that the former plan is, as a rule, the better. I know quite well that when the branches are left untouched the first season, and make scarcely any growth, that the same branches if cut back the second season will push fresh growths from the base even if no buds are visible. Old trees do that when cut down for grafting. The second year's growths may be good, and they ought to be, but a year is lost all the same, as I will show from examples.

A gentleman procured a number of Apple trees from Mr. Bunyard last year. They were good trees. Though his experience was sufficient to guide him rightly, he yet read attentively Mr. Bunyard's paper and my comment thereon. It may not have been in consequence of what either of us said, and probably was not, nor does it matter whether it was or not, but the fact remains that he did not follow Mr. Bunyard's advice with Mr. Bunyard's trees, and is now delighted with their condition. The number of branches is doubled, or more, and they are as strong as is desired for ripening, with fruit buds forming on the lower portions—last year's wood. By the autumn good heads will be formed, and a good "framework" for fruitful trees provided.

Another planter of equally good trees, but in better soil, did not shorten the branches. I have been to see both sets of trees, and the number of branches of the latter remains the same as when planted, and not appreciably thicker. One or two have pushed shoots 2 or 3 inches long, but the majority only produced a few small leaves, the root force being inadequate to do more than that. The branches must be cut back in the winter, as Messrs. Bunyard and Young advise, or the trees will be ruined, and next year they will not, and cannot, produce more and better growths than those above referred to of the first year pruned trees. Is there not by comparison a year's growth gained in one case, and a year's growth lost in the other?

If the two sets of trees were dug up in the autumn and sold by auction in Maidstone market, those first alluded to that were pruned after planting would realise at the least thrice the price of the non-pruned, indeed some of these would not be saleable, for they are dead, yet the same price was paid for all nine months ago. I am meeting Mr. Bunyard, I hope fairly, on the ground of practice, and this as borne out by trees that were his own last year shows that there is at least one exception to the soundness of his doctrine as represented by scores of trees, and these not growing in a garden but an open field. It would almost appear from this experience that his trees are better than he thinks they are, and will do more than he expects of them.

I can quite understand there may be a difference in the growth of field and garden trees, also that in the former case, where the soil is heavy and cold and the trees roughly planted, the first growth after the first year's pruning might not be strong and matured at the end of the season, but "pipy and sappy;" but on the other hand if not shortened some might be dead. Mr. Bunyard now says his remarks were "never intended for garden practice." Had he said this at the first I should not had the same scope for comment; but his statement covered all sorts of Apple trees and all sorts of practice, and I am free to confess that I had not in my mind roughly planted trees in fields, but rather trees well planted in land fitted for their reception. My experience has been gained from good workmen and good workmanship rather than bad, and this I had in view when first writing on the subject. Nurserymen have to deal with all sorts of people, and some of them no doubt commence spoiling trees as soon as they receive them by bad planting in bad soil. Mr. Bunyard has found that for them his plan is the safest. Thus reduced I have no desire to say anything against it, but I am not prepared to admit that what is best for bad workmen and bad soil is also best for good workmen and good soil, but believe in as much skill as can be acquired being turned to account, and the best made of immediate circumstances.

I quite comprehend Mr. Bunyard's references to "hospital trees," and also know that his method of treatment is not universal. He adopts the plan he finds best; others do the same, though not in the same way. This is a question on which doctors differ, and the millennium when they will agree is, I suspect, a few years distant.

I cannot follow the *rationale* of Mr. Bunyard's advice to leave the branches of comparatively fibreless Apples on Crab stocks unshortened after planting, while those on Paradise stocks, "full of roots," may be pruned. Most persons would, I think, be inclined to reverse the proposition, though Mr. Bunyard thinks "both benefit by being uncut the first year." The majority of experienced gardeners do not, nor does Mr. Kruse. I called at Chiswick in the spring, and observed a number of young Apple trees recently planted. They included several varieties on different forms of the Paradise stock. Mr. Barron is not a great talker, but he has as clear ideas as most men on the subject of fruit culture, and his work as represented by hundreds of trees of various shapes in the garden is more forcible than words. It was not necessary to ask if he was a believer or otherwise in the practice of pruning trees soon after planting, for the trees were pruned. It does not follow that he will prune them similarly next year, as they may produce a sufficient number of sufficiently strong branches the first season, instead of waiting for the second, for the foundation of fruitful trees.

Spring, when the sap is moving, is the time to shorten the branches of newly planted trees. Mr. Young once said he could not understand this. I thought it best to leave him to "think it out," and when he says he is unequal to the task of solving the problem I will endeavour to come to the rescue. I think I have said enough at present, and thank Mr. Bunyard for his useful and suggestive communication.—J. WRIGHT.

JOTTINGS.

POPPIES.

THE variable character of the annual Poppies has been taken advantage of by cultivators, but not perhaps to the fullest extent possible, or our cornfield Poppy (*Papaver Rhæas*) would have been the subject of more experiments. Even in a wild state it varies considerably both in the size, colour, and markings of the flowers; in some the flowers possess the dark spots in the centre as described in most of the text books to British botany, while in many others they are absent, and this seems to be almost exclusively the case with the plants in my district. This Poppy is not strictly a native of England, but is regarded, in common with all the others found in this country, as a colonist, as might be expected in the case of a plant that produces seed so freely and is so closely associated with cultivated plants. It is widely distributed, being found throughout Europe, northern Africa, parts of Asia to India, and even apparently to Japan. At least, it has been an inhabitant of Japanese gardens for a considerable time, as some years ago M.M. Vilmorin & Cie. of Paris introduced from Japan a series of distinct double and single varieties which were placed in commerce under the name of "*Coquelicots Japonais Pompons variés*," *Coquelicot* being the French designation of *P. Rhæas*, and familiar to ladies in this country as the title of a fashionable shade of colour. These Japanese varieties have been increased in number and diversity, and now constitute a pretty group, the double forms in particular being notable for their compact habit and neat richly coloured flowers, constituting, when well grown, really handsome garden plants.

There is also a double form of *P. Hookeri*, which has been grown at Chiswick as Hooker's Double, having good sized dark red full flowers and freely produced. Like the Shirley Poppies it was accorded three marks by the Floral Committee, and will, no doubt, prove useful, as one strong point in favour of the double Poppies is that they last much longer than the others, and, though wanting in the gracefulness of the singles, their durability compensates for this defect.

Before quitting these a little experiment may be noted, though the results cannot be given. The charming perennial Iceland Poppies, *Papaver nudicaule* varieties, are well known and equally appreciated both as garden plants and for cutting. Crosses between these and the Shirley Poppies, either with a view of procuring yellow annual forms, or preferably with the desire of transferring some of the colours in annuals to the Iceland Poppies, ought to give something of an interesting character if the cross could be effected. With the object of testing this a plot was devoted to plants of the two types named, leaving them in a great measure to the chances of insect cross-fertilisation; but in a number of cases also the flowers were fertilised with pollen of the other type. It is almost needless to say that abundance of seed was secured; but of course it is as yet impossible to say whether the cross has really been effected or not, nor can we imagine what the results will be, though we hope for something good.

One other species of the *P. Rhæas* type remains to be mentioned—namely, *P. umbrosum*, which displayed its charms in the

Chiswick Garden to the best advantage, and it also was honoured with three marks. It is one of the most brilliant of the whole group, as the flowers are of considerable size, of the richest scarlet, which is rendered even more intense by the shining black blotch at the base of each petal. In beds this Poppy has a grand appearance, and the colour renders some of even our brightest plants dull in comparison. Autumn-sown seeds yield plants that should be strong little specimens by the following spring, as it is quite hardy in most southern and midland districts, like other natives of the Caucasus, and in June and July it will yield its flowers liberally.

Turning to another type of Poppies, the varieties produced by *Papaver somniferum*, we have numbers that have taken a place in gardens, though not distinguished by the rich colours of the preceding, and in fact altogether less pleasing. *P. somniferum* is familiar as a wild plant both in England and other European countries, yet it is unquestionably an introduction very widely diffused. It is readily recognised by its upright growth, hard deeply cut glaucous leaves, and large flowers, white with purplish spots at the base, and in cultivated forms the colouring ranges through some very peculiar shades of purplish mauve and dull crimson. By far the best of the group is *Danebrog*, which is said to be a hybrid between *P. somniferum* and *P. umbrosum*; it has scarlet deeply serrated petals and a silvery white centre, a peculiar contrast but very effective. *Mephisto* is a companion to the last named, also with scarlet serrated petals, but purplish black central blotches take the place of the white ones in *Danebrog*. Both these received three marks, as did also the following of the same group:—*Steinforth*, pink and red, dwarf; *Rawson's Fringed*, taller, red and white, deeply fringed; *Snowdrift*, double white, fringed; and *Double Pæony*, white, large flower, not fringed.

THE BEST ANNUALS.

Most of these are so well known that a list of the sorts selected by the Committee will suffice if given at the conclusion of these notes; but there are some that deserve a little more attention, and first amongst them is the charming Algerian annual *Linaria reticulata aureo-purpurea*. Several of the annual *Linarias* are extremely graceful and bright flowered plants, far more worthy of a space in the garden than dozens of weedy occupants. *L. maroccana* and *L. bipartita* are both capital plants, but there is something very charming about *L. reticulata*. It is not so useful for massing as some other annuals, but its neat richly coloured purple and gold flowers in slender elegant spikes are well fitted for cutting, and look excellent in small glasses. This was evidently a general favourite with the Committee, as nearly everyone present gathered a specimen.

Another plant which stood out conspicuously by reason of its distinct appearance was *Bartonia aurea*. It is a Chilean member of the peculiar and rather forbidding *Loasa* family, growing about 12 to 18 inches high, and producing its rich golden flowers in profusion. It is not one of the common garden annuals by any means, and perhaps it has lost favour with some because it has not had a suitable situation. The fact is it requires a rather warm position and light rich soil; it is useless attempting to grow it in wet, heavy, and cold soils with the object of obtaining it in the best condition.

For its rich blue flowers *Eutoca viscida* is worthy of a place in the best collection, even though its charms are of short duration. Blue flowers are not too numerous in gardens, and such a blue as this is as satisfactory to those who appreciate pure bright shades of colour as the lovely and unrivalled *Salvia patens*. This *Eutoca* is one of the many beautiful annuals obtained from California that can be grown here with good results, and plants are readily raised either from spring or autumn sown seed.

Two useful members of the annual *Compositæ* are *Coreopsis coronata* and *C. Drummondii*, both of which were well represented in the Chiswick trial. They are easily raised from seed, and their bright golden flower heads, borne on long slender graceful stems, are capitally adapted for cutting. The value of these plants is by no means generally recognised in gardens, but some of those engaged in floral decoration have discovered their merits and utilise them accordingly. At the Royal Botanic Society's Evening Fête this year it was interesting to note what a large quantity of these flowers were employed in different exhibits, but especially in those from Stoke Newington, where Mr. Chard has employed it for some time in various ways. These annuals are amongst the few that really pay for cultivation in pots, as they can be had in flower much earlier under glass, and the plants are well suited for arranging with others in a conservatory, or wherever groups are required.

Platystemon californicus is one of the Californian allies of the Poppies with small Buttercup-like flowers, of a creamy yellow colour,

and having a central tuft of stamens. Singly the plants are too small to be very conspicuous, but in patches they look well, and though perhaps the plant is rather more delicate than some of the annuals usually grown, it is worth a warm, sheltered, and moderately dry position, where with a little care it will succeed.

The other annuals distinguished by the Committee were as follows:—*Silene pendula compacta*, *Candytuft*, *Dunnetti* (deep purple), *Eucharidium grandiflorum*, *Silene Armeria*, *Leptosiphon roseus*, *Campanula macrostyla*, *Nolana atriplicifolia*, *Limnanthes Douglasii*, *Kaulfussia amelloides*, *Asperula azurea setosa*, *Linum grandiflorum*, *Mignonette Covent Garden Favourite*, *Gilia linifolia*, *Gypsophila elegans*, *Eschscholtzias*, *Viscaria cardinalis*, *Clarkia integripetala*, *Erysimum arkansanum*, *Schizanthus pinnatus*, *Lupinus nanus albus*, *L. luteus*, and *Malope grandiflora*. The Stocks and some other plants were examined at a subsequent meeting, but the above selection will be some guide to those who wish to sow a selection of seeds this autumn, as they were chosen for their general qualities of habit or flowering.—L. CASTLE.

CANKER IN FRUIT TREES.

I AM glad that "W." and Mr. Hiam do not permit the question of the cause of canker to rest. I did hope others experienced in cultivation would have joined in the controversy, and by giving the benefit of their observations have aided in taking away the opprobrium of orchardists—that notwithstanding centuries of cultivation nothing definite is known of a disease which is their greatest terror and bane. There may be favoured districts where the disease is unknown, but my experience leads me to believe that most growers of fruit trees have under their care cankered trees which it would be well worth their while to study and treat experimentally. The work would soon interest them, and by patient observation and availing themselves of modern scientific methods and appliances, especially the microscope, in the use of which, considering the mischief wrought by low forms of life invisible to the naked eye, every good cultivator ought to be an expert, they might in course of time satisfactorily and definitely solve the question as to the origin of canker, and when the cause is known it might not be difficult to find a remedy.

I hope some will give a fair trial to the treatment suggested by me, which is based on the assumption that the disease is caused by imperfect nutrition. I recommend in the case of the Apple that they should apply as a top-dressing a complete artificial manure containing full proportions of lime and soda, as the analysis of the ashes of this fruit tree shows it to contain an unusually large proportion of these elements. Wood ashes or stable manure, preferably the former, may be substituted for the artificial manure; but whichever is used proportions of lime and common salt should be added. I can in support of my recommendation appeal to my own experience of this remedy. Four years ago many of my Apple trees were very much affected; in fact, as I have elsewhere stated, about a score having become very unsightly were marked for destruction, but ultimately reserved for the experimental treatment. The whole of my Apple trees in the winter of 1886 were dressed with artificial manure to which soda and lime had been added. These trees from 1887 have been from time to time carefully examined by experts, yet up to the present date not a single trace of the active disease has been found. Under these circumstances it is difficult for me, having used no insecticide, to believe that Mr. Hiam's theory, that "canker is caused by an insect," can be true. "W.," with many of whose views on the subject I agree, has inspected my trees (I shall be happy to show them to anyone interested in the matter who will give me timely notice of his intended visit), and has quoted my case in opposition to Mr. Hiam's. "W." correctly stated that I had used no insecticide, as in fact nothing other than the manure has been applied to my trees. Will Mr. Hiam kindly give fuller information of the treatment of the trees stated by him to have been cured? Did he previously to the application cut away the diseased parts? If so, it would be interesting to know what was the appearance of the wound in succeeding years. Did Mr. Hiam in the course of his treatment root-prune, transplant, top-dress, mulch, or in any other way, excepting the application of the insecticide, deal with the trees? I hope that Mr. Hiam will send to the *Journal of Horticulture* some more specimens of the insect which he charges with the offence in order that it may be identified.

Some eminent German authorities have stated that a form of fungus is the cause of the mischief. This may be the case, but I think it quite possible that the fungus, equally with the insect, is the consequence and not the cause of the disease. It would be well if Mr. Hiam carefully inspected the cracks in the bark other than those caused by canker; it may be he will find the insects so

unjustly slandered by him as innocently housed in these as in the crevices of the cankered wound which he accuses them of generating.—EDMUND TONKS, *Packwood Grange, Knowle, Warwickshire.*



CATTLEYA ELDORADO.

THE varieties of this Orchid are numerous, varying as they do from pure white to the darkest shades of colour, and are invaluable for ornamental purposes as well as for cutting during the months of autumn. To grow the plants well they should be grown at the warmest end of the Cattleya house, where a good supply of moisture can be maintained during the season of growth. They appear also to enjoy more water at their roots than the majority of Cattleyas. Where the plants have been grown warm they will have completed their growth and have commenced to show their flower sheaths. When they reach this stage remove them to the coolest and lightest end of the house, so that their pseudobulbs will become thoroughly ripened. The supply of moisture may be gradually diminished, but on no account should they be allowed to become so dry as to prematurely ripen them. Although this Orchid enjoys liberal supplies of water at its roots during the growing season, it cannot endure large quantities of wet unoccupied soil. Being only of moderate growth it does best when somewhat limited in its root space; in fact, succeeds admirably in a basket suspended from the roof, or on a good sized block with a little sphagnum.

ONCIDIUM JONESIANUM.

Few Orchids are more beautiful suspended from the roof of a house. The lip, which is pure white, is very conspicuous with the richly spotted sepals and petals behind. The freedom with which it flowers and the length of time that the flowers last should commend it in this respect to all, however limited the collection may be. It is only right, however, to point out that few Orchids are more seriously injured than this by flowering early and the flowers remaining on the plants until they fade. Imported plants very often flower profusely, even before they have established themselves. It is a mistake to allow them to do so, or even allow them to retain their flowers long after the first season's growth. Plants that are allowed to flower from the first gradually dwindle and eventually die. Remove the spikes as they appear until the plants have made a good quantity of roots and strong growth. Although only a small rooting plant they should not be secured to smooth small thin pieces of wood. They will be found to do better on larger and thicker blocks of wood that are moderately rough outside, so that they are capable of holding moisture for a greater length of time. A little sphagnum on the block is also useful for this purpose. Like most *Oneidiums* it appears to enjoy a moderate amount of light, and grows and roots better in the *Odontoglossum* than in the *Cattleya* house.

DENDROBIUM FORMOSUM.

This and its variety *giganteum* are well worth growing in quantity, on account of the large flowers they produce and the length of time they last in good condition. The flowers are admirably adapted for bouquet making. They are produced on the top of the young pseudobulbs after they have obtained a fair amount of solidity. Both are evergreen, and do well in baskets or shallow pans suspended from the roof. They require more light during growth than is necessary for *D. Wardianum*. Strong sturdy growths should be produced, and these are certain to flower. This can be accomplished by growing the plants in a warm moist structure where they can enjoy shade from strong sunshine and a good circulation of air. Liberal supplies of water are needed during the season of growth, and the syringe may be used freely. The plants do well in good peat with a little living sphagnum on the surface.—ORCHID GROWER.

LIQUID MANURE FOR FRUIT TREES.—Numerous large fruit trees are well set with fruit this season, but in many instances much of this will either drop or be very small if it hangs on unless the trees are fed at the roots in some way. Those against walls or situated in the open cultivated ground and which are growing healthily may not need this assistance, but any that are stunted in growth and perhaps overrun with red spider, as well as old orchard trees generally, will repay for timely attention. Heavy rains have fallen in most parts of the country,

and these will have well moistened the ground to a good depth, rendering it in excellent condition for the reception of fairly strong liquid manure. It is not at the bole of the tree where the feeding roots are to be found, but at a considerable distance from it, or say as far as the spread of branches. On cultivated ground it will hasten the work if a large basin is formed to hold the liquid manure, or shallow furrows may be drawn for a similar purpose, while holes may be formed thickly under orchard trees with the aid of a crowbar. Nothing surpasses the drainings from a farmyard, this being freely supplied to the roots, but sewage water and diluted drainings from a piggery are also safe fertilisers. In any case, or if a special manure is substituted and washed in, a thorough soaking should be given, and repeated if possible, or it will be so much labour thrown away.—I.

SELECT ALPINE PLANTS.

ACANTHOLIMON VENUSTUM.

FOR some time past this has been a very pleasing plant, producing in abundance its elegant sprays of delicate pink blossoms, such as are sure to give satisfaction to a large proportion of those who delight in the cultivation of alpine plants. It appears to thrive best in a mixture of sandy loam and leaf soil, to which a proportion of one-fifth of decayed manure and a sprinkling of old mortar rubbish has been added, preferring a sunny spot and well drained, and delighting in abundant moisture in the summer months. It is essentially a rockery plant; or, if no rockery exist, a raised position in the border should be assigned to it, or it may be grown quite well in pots. Its near ally, *A. glumaceum*, is of free growth, and may sometimes be seen used as an edging; indeed, it was employed thus many years ago in the Exotic Nurseries, Tooting, where it formed compact cushions, ornamental as well as useful. Both species may be propagated by division, an operation best performed in early spring, giving water rather sparingly to *A. venustum* till it has taken well to the soil. Though rather freely flowered, seeds are, according to my experience, but sparsely produced. They are closely allied to the *Staticee*.

PRIMULA MINIMA.

The Fairy Primrose is an alpine gem of considerable merit and deserving extensive cultivation. It is usually recommended for dry positions, but my experience is rather opposed to this. My plants are growing in a rather rich loamy soil in pots, and are abundantly supplied with moisture, which, judging by their luxuriance, suits them admirably; the situation is somewhat shaded and generally moist. The plant throughout is of diminutive growth, not more than an inch high from the soil, the leaves forming the rosettes deeply notched at the extremities; from these tiny rosettes a simple stem bearing a solitary flower springs, which is of a rose colour, nearly an inch across, and these when well grown will nearly hide the plant—that is the spreading tuft of leaves—from view.

A much superior plant is a variety of the Fairy Primrose, called *Vivid*, the flowers considerably larger, brighter in colour, and generally more effective than the type. I only procured this one during last year, having previously no knowledge of it, and am much pleased to make its acquaintance; and since it has proved so decided an advancement upon the original species I am with every confidence recommend it to all lovers of choice alpine. Though readily increased by division of the stools its multiplication is not to be generally recommended, for a large plant is calculated to produce a very telling effect if in one mass, as it should be, though they make but little show if cut up into small seraps. Some years ago I had plants growing in pots 7 inches across, the plants being perfect masses, quite filling the pots; they flowered profusely annually, and were greatly admired. I gave them a similar treatment to that I now adopt, taking care always to withhold water from them during the greater part of the winter season, and admitting abundance of air to the frames day and night, even in the most frosty weather, to these and other choice *Primulas*, believing that our continuous damp winters are opposed to their welfare, and at the same time they encounter no injury from prolonged frost when comparatively dry overhead and at the roots.

As regards repotting—i.e., merely shifting on into larger pots—this may be done at any time during the early summer months; but for dividing and repotting the plants I have found both the early autumn and early spring alike good, with little or no apparent difference as the result. Personally I prefer the month of March, just when these plants exhibit signs of new life, for then the new roots which are annually formed have a better chance of getting away into the soil. After flowering is the generally accepted time for potting these plants, though it has never had my support, for many plants make a great quantity of new roots prior and up to

their flowering, and which in the case of these *Primulas* are subject to injury, to say nothing of the check they may receive when dividing and potting them in the height of the summer.

SAXIFRAGA ARETIODES PRIMULINA

Is a diminutive gem among the many choice kinds which constitute the crustaceous section of this genus. The tiny rosettes of leaves are not more than a quarter of an inch across, tightly packed together, and forming a perfect cushion. It is still, as it always has been, a comparatively rare plant owing to its slow growth, in this respect resembling the type as well as some other small-growing species, as *cæsia*, *diapsioides*, *squarrosa*, and the like. The only generally adopted mode of propagation is by division, but the operator has to be content with very few at a time. Cuttings, however, root readily in moist sand under bell-glasses, the cuttings in this case being the tiny rosettes separated from the parent with the point of a sharp knife, and, if possible, with a heel. Press these into the sand and keep moist and shaded for two or three weeks, by which time many will have formed roots and may be potted singly in small thumb-pots, in a mixture of very sandy loam and finely broken brick rubbish. Progress is naturally slow in the first year, but in the second compact little plants will be formed, which, if carefully attended to, will flower the following year. All this tribe of small-growing *Saxifragas* grow well in sandy loam, leaf soil, and broken brick or old mortar rubbish, and are well suited for the rockery or for pot culture.—J. H. E.

STRIKING CUTTINGS OF BORONIA

MEGASTIGMA.

It is not generally known that cuttings of this deliciously scented and useful greenhouse plant will with proper care and attention root easily and quickly. Our first attempt to strike the cuttings resulted in failure, owing, I believe, to the fact that the young shoots selected were a little too hard and well ripened before being inserted. A more recent attempt has been quite successful. The cuttings taken on this occasion were about half ripened, and were taken off with a heel and inserted in sandy peat in well drained pots, which were plunged to the rim in sawdust and kept close under a handlight placed in the *Camellia* house. The cuttings were dewed with a syringe every day if the foliage was dry, and if several dull or wet days succeeded each other a thin label was placed under the top of the handlight to dry up condensed moisture. The cuttings were, as a matter of course, shaded from bright sunshine till well rooted, when they were potted firmly in small 60-pots and placed under handlights again till they were sufficiently inured to light and air to be placed in a cold frame, where plenty of air is given. In addition to being much appreciated for its sweet scented flowers, this *Boronia* is extremely useful for arranging in groups during the autumn and winter months. Plants in 5-inch pots with numbers of elegant shoots make useful dot plants to intermix with those of dwarfer growth.—H. DUNKIN.

THE LONDON PARKS.

HYDE PARK.

DURING the spring and summer months horticulturists can always pay a visit to Hyde Park with advantage, as something noteworthy can invariably be found, some hint can be gained by observers, and probably turned to good account, as this park has been long famed for the excellent gardening there displayed. In the spring months the beds are gay with bulbs, and these are no sooner past their best than their places are occupied with the plants that provide the summer attraction, for just at the season when the visitors to the park are most numerous it would never do to have a series of bare beds in the most conspicuous positions. The spaces between the carriage drive and Rotten Row, and at the sides, are usually adorned with *Rhododendrons* in variety in early summer, to be succeeded by *Palms*, *Ferns*, *Musas*, and all the usual sub-tropical plants later on, which impart a cool refreshing appearance to that very fashionable and much-frequented portion of the park. Near the head of the *Serpentine* is a particularly pleasing little sub-tropical dell, which from its sheltered moist position is well adapted for such plants. Extensive beds of a similar character, and others filled with flowering plants, are seen in other parts, but the chief floral display is concentrated between the Marble Arch and Stanhope Gate, on the east side, adjoining Park Lane. These are arranged in single and double series, mostly spacious oblong beds, some with the corners rounded, and some small circles between; all are cut in the turf, which is close, fresh, velvety, and admirably kept.

To what may be termed the Park Lane flower garden a few descriptive notes may be devoted, and first it must be remarked that it is evident from a general inspection that no attempt has been made to produce the dazzling effect of masses of colour such as *Zonal Pelargoniums* afford, and which at one time, not long past, were considered

indispensable in summer flower gardening. For several years it has been evident that a gradual change in popular taste was occurring, and at Hyde Park advantage has been taken of this to introduce more variety in the style; more beds of mixed plants have been employed, and we have frequently had occasion to commend these as affording a welcome break from the monotonous masses of colour afforded by the *Pelargoniums*. This year the exclusion of the latter is still more marked, and with the exception of a few beds at intervals they are almost confined to the long ribbon borders near the shrubberies, where they look well as a relief to the rather sombre leafage of town shrubs. It would be impossible, or at least very inadvisable, to attempt to dispense with *Pelargoniums* in large parks like this. Some colour is indispensable, and though *Tuberous Begonias* are now being usefully employed to furnish rich and bright tints, they cannot altogether supersede the older favourites. It is, however, somewhat strange that though Messrs. Laing and Son have for some years most satisfactorily shown what can be effected with *Begonias* as bedding plants, yet in none of the London parks have they been tried at all extensively, and the experiments with them seem to have been made in a rather half-hearted manner, mostly too with varieties that are not the best fitted for the purpose.

The great feature of the bedding at Hyde Park this year is afforded by the *Fuchsias*, of which some thousands have been employed with pleasing results, and all who admire these plants will welcome any attempt to increase their popularity. Not only have they been planted in mixed beds, but larger, bush-like, and taller conical specimens have also been plunged between the beds and on the turf slopes, where they seem to have well escaped the ill effects recent storms were likely to produce. The varieties, however, are not very numerous, and of those selected the well-known useful variety *Mrs. Marshall* is far the best for the purpose, in habit, number of flowers, and colour; the pure white corolla contrasting with the scarlet calyx renders the flowers more conspicuous than those with purple corollas. The latter in quantity have a rather dull effect, and that perhaps is the chief defect of *Fuchsias* for bedding purposes, particularly where the display has to be viewed from a distance. In other respects much can be said in their favour, and if they are only sparingly used they aid very agreeably in increasing the diversity. Besides the variety named the principal sorts grown at Hyde Park this year are *Tower of London*, with a deep purple corolla and red calyx; *Annetti*, with peculiar rosy mauve flowers, the corolla much expanded and funnel-like, free, but the strange tint is rather against it; *Empress of Germany*, double purple corolla and red calyx; and *Madame Cornilison*, an attractive variety with a red calyx and white corolla.

Some of the most distinct of the beds may be noticed briefly, as conveying an idea of the plants employed and the method adopted. From the Marble Arch to Grosvenor Gate the beds are in a single series on the left hand side of the walk when proceeding in a southerly direction, then for the greater part of the distance from the last-named gate to Stanhope Gate there single beds on the left and a double series on the right, the turf here being somewhat raised, and each opposite pair of beds is planted alike. Starting from the Marble Arch there is a showy ribbon border down to the Green Street Gate, occupied with scarlet *Zonal Pelargoniums*, *Ageratums*, *Calceolarias*, and *Lobelias*, a similar border being continued for some distance beyond the latter gate. In one of the first of the beds *Fuchsia Madame Cornilison*, about 2 feet high, is planted in a groundwork of *Violas*, edged with *Coleus splendens* and *Lobelia pumila magnifica*. Another mixed bed contains *Fuchsia Empress of Germany* on a ground of *Mimulus*, edged with *Centaurea candidissima* and *Lobelia Swanley Blue*. In a third *Iresine Lindenii* and *Pelargonium Rosamond Wright* are planted in alternate diagonal lines, the white-edged foliage and pink flowers of the latter contrasting with the dark *Iresine*, and the bed was edged with the golden bronze-foliaged *Fuchsia Meteor*. *Fuchsias* on a ground of *Amaranthus* edged with *Pelargonium Golden Fleece* and *Lobelia* had a rather dull appearance, the ground colour not being light enough. *Iresine Lindenii*, in lines with *Pelargonium Happy Thought*, and edged *Koniga maritima variegata*, formed a fairly good bed; but a more effective one comprised *Fuchsia Tower of London* on a base of *Stenotaphrum americanum variegatum* (erroneously labelled *Stenophorum*) edged with *Centaurea candidissima* and *Lobelia Swanley Blue*. *Fuchsia Mrs. Marshall* or *Mentha Pulegium gibraltaria*, and dot plants of *Iresine Wallisi*, edged *Coleus refulgens* and *Lobelias*, was not very bright, and the *Fuchsias* where employed in this way seem to need a much lighter groundwork to show them to advantage; some grey or white-leaved plant would be more suitable, or a light-flowering plant.

At the Grosvenor Gate commences the double series of beds, and there also are the majority of *Fuchsias* plunged in the grass, plants 3 and 4 feet high, well furnished with growth, and bearing abundant flowers. *Palms* and other large specimens are placed out in a similar way, with the result that this portion of the park has a most diversified and attractive appearance. Mixed beds of *Mignonette* and *Stocks*, or the latter with *Phlox Drummondii*, diffuse an agreeable fragrance, and this is a point that should never be lost sight of, for a few fragrant plants are most welcome in every flower garden. Noting some of the beds in this portion we have in the double series pairs planted in the following manner:—*Pelargonium Triomphe*, pink, small flower, in good trusses, and free, edged *L. pumila magnifica*; tall plants of *Fuchsia Tower of London*, in a ground of *Viola Mrs. Turner* (lavender), edged *Lobelias*; *Tuberous Begonias* in a bed of *Musk*, edged *Iresine Lindenii* and *Veronica Andersonii variegata*; *Fuchsia Madame Cornilison*, 3 feet high, well flowered in a bed of *Viola Cliveden Purple*, very rich, edged *Veronica Andersonii variegata*; *Pelargonium Henry Jacoby* (edge

Veronica), this Zonal Pelargonium well maintains its character as one of the best of the dark-flowered varieties; Chrysanthemum *Précocité*, the early yellow variety, but not yet in flower, associated with Tagetes, and edged with Lobelia Swanley Blue; Calceolaria Bijou, small dark bronzy red flower, free, but rather dull, edge Lobelia; Fuchsia Tower of London on bed of Viola Beauty of Chipping Norton, edge Fuchsia Cloth of Gold—an effective bed, the margin being good.

Next to these is an oblong carpet bed, with centre crosses of Alternanthera versicolor, edged with Pachyphytum; a scroll of A. magnifica and panels of A. amoena, edged with A. paronychioides aurea, edged with small plants of Sempervivum tabulaforme, the whole being on a ground of Herniaria glabra. This bed was well coloured and the design pleasing, without being too elaborate or formal. There were also a few others to which these remarks equally apply, but it is evident carpet beds are not so much in favour as they were. A large circle of the dark bronze-leaved Canna Adrien Robini had a bold appearance, but four small circles of Alternanthera paronychioides major, in which was planted scarlet Tuberous Begonias edged with Alternanthera nana aurea, were not very pleasing, the two shades of red together rather spoiling each other.

Upon the lefthand side one of the most showy beds contained the dazzling scarlet Pelargonium C. Schwind, which possesses as many good qualities as Henry Jacoby for bedding purposes, edged with the golden-leaved Pel. Robert Fish and Lobelias. A mixed bed of the following plants was also interesting though a trifle crowded:—Verbesina gigantea, with large deeply cut leaves and winged stems; Wigandia caracasana, with its bold broad foliage; Nicotiana affinis, Verbena venosa, and the curious Amicia zygomeris, which is rarely seen in bedding arrangements. Mixed beds like these chiefly of foliage plants with a few flowering plants have a good effect. Beyond these there are two other series of beds, one on each side of the walk, and representing most of the plants that have already been noted, with the exception of Carnation Raby Castle, which occupies a large circle, and has some fine rose-coloured flowers. This probably is the same as that which has been for some years so successfully bedded out in the gardens at Raby Castle under the charge of Mr. Westcott, and where a year or two since were some admirable examples of the variety.

With so large a number of beds to fill and such enormous quantities of plants to raise annually it is surprising that so much diversity can be introduced, but the work is well done and thoroughly creditable to the superintendent (Mr. W. Browne) and his assistants.

MR. ROBERT SYDENHAM'S CARNATIONS AND PICOTEES.

THIS collection is well worthy of notice, for it is not only a very extensive one, but the plants are also noticeable for excellent cultivation. These are grown in Mr. Sydenham's private garden at his residence in the Bristol Road, Birmingham. Three span-roof houses are devoted to Carnations and Picotees, one for the former, another for the laced or edged section of Picotees, and another for Fancy and self Picotees and Carnations. These houses are about 33 feet long, 5 feet high at the sides, 7 feet 6 inches in the centre, with a 6-feet high door at each end; sliding glass lights at the sides, removable at will, with removable lights at the top; glass ends and doors, the glass at the sides and ends to within a foot or so of the ground. There is also ample top ventilation on each side of the apex. The pots rest on blue tiles. The shading of the houses is arranged on Mr. Dodwell's plan, and is both efficacious and easily worked. Each house holds about 175 pots. Mr. Sydenham does not overpot; pots firmly, and uses freely inverted oyster shells on the surface of the soil.

CARNATIONS.

Scarlet Flakes.—Alisemonde (Douglas) and Matador were very fine indeed, and Harry Carswell, John Ball, and Sportsman were good.

Scarlet Bizarres.—Robert Houlgrave, very bright; Arthur Medhurst and J. Crossland were very noticeable and striking.

Rose Flakes.—Rob Roy, very bright and clear white ground colour; Miss E. Wemyss, Thalia, and Sybil were particularly handsome; and Dorothy's Sister, delicate and lovely.

Crimson Bizarres.—Master Fred, extra fine; Duc d'Aumale, clear in the white and fine; J. D. Hextall, Joseph Lakin, and Edward Rowan all good; John Harrison was washy in colour.

Purple Flakes.—James Douglas was excellent, and George Melville is one of the best; Gordon Lewis has a good clear white ground, a pleasing shade of purple; Florence Nightingale and Mayor of Nottingham both good.

Pink and Purple Bizarres.—Mrs. Gorton and Sarah Payne stood out prominently as excellent varieties.

PICOTEES.

Mr. Sydenham is strong in these. *Heavy Red-edged* varieties.—Brunette was pure in the white and well marked; John Smith, Dr. Epps, and J. B. Bryant all admirable. *Light Red-edge*.—Emily, Violet Douglas, Thomas Williams, and Mrs. Bower particularly fine.

Heavy Purple-edge.—Muriel, very fine generally; Juliette, Zerlina, and Mrs. Chancellor. *Light Purple-edged*.—Several very fine blooms of Her Majesty, a refined flower of great merit, and Clara Penson very good; Alice, a handsome flower; Nymph, and Sylvia, pure, with fine petal and bloom.

Heavy Rose-edge.—Edith D'Ombrian, rather thin, but lovely in colour; Daisy, a refined lovely flower, and Lady Holmesdale, a very

beautiful flower, good everywhere; a seedling of Mr. Lakin's, marked in Mr. Sydenham's list 109, is a promising flower with a well formed petal. *Light Rose-edge*.—Orlando is a grand flower, and Amy Lakin good.

Heavy Scarlet-edge.—Constance Heron, a fine flower, but with a tendency to "bar"—i.e., to show colour beyond the edge; Mrs. Rudd and Mrs. Sharp both good; also Juliana. *Light Scarlet-edge*.—Lyddington's Favourite in capital form, some grand flowers. The varieties enumerated are but a portion of the collection.

Like many other growers of the Carnation and Picotee, Mr. Sydenham is fully alive to the claims of our superb Fancies and selfs, of which he already has a fine collection. In Fancies there is to be seen such flowers as Agnes Chambers, Annie Douglas, Germania (grandest of all yellows), Colonial Beauty, Mrs. Reynolds Hole, Almira, Dorothy, Countess of Bective, Dodwell's 197, pale yellow and very fine, all flowers of great beauty and sterling merit, which should be in every garden. A full collection of the Kilmurray seedlings are here, some of novel and lovely tints of colour. Then there are the selfs and Fancy Carnations, many seedlings, and some new flowers. Mr. Sydenham has a very beautiful rose self sport from Thalia, several plants and all true selfs, and a very superb rich deep scarlet and maroon sport from Arthur Medhurst, superb petal and form; then another brighter scarlet and maroon sport from Joseph Crossland. On all the plants from each sport the blooms were true. There is a dark ruby self of great promise, Beauty of Whitby, a salmon scarlet, with fine petals and form; Virgo, a lovely pure white; The Bride, another good white; Florence, buff yellow, all good. Another very fine white is to be found in Emma Lakin, a superb flower of fine form. These glorious selfs and Fancies are coming rapidly to the front, and must no longer be ignored, as they have been by old florists in the past. Such is also the opinion of Mr. Dodwell, who gives them every encouragement and carefully hybridises to obtain sterling new varieties.—AN OLD HAND.



EVENTS OF THE WEEK.—The annual Show at Maidenhead will be held to-day (Thursday), and the Co-operative Show will take place at the Crystal Palace, Sydenham, on Saturday next, August 17th.

— **ROYAL HORTICULTURAL SOCIETY.**—At a General Meeting of the Society held last Tuesday in the Drill Hall, London Scottish R.V., James Street, Victoria Street, S.W., Rev. Wm. Wilks, M.A., Secretary, in the chair, the following candidates were duly elected Fellows of the Society—namely, Hon. Mrs. Barton, Henry Thomas Bird, Jonathan Thomas Carr, William Cuthbertson, Robert Moses Dawson, William Day, Saml. Fellows, William Gaymer, Arthur W. Hutton, William B. Morle, Henry Pain, Rev. Canon Phillpotts, G. W. Riley, and Henry Tate.

— **GARDENERS' ORPHAN FUND.**—The Gardens at Ketton Hall, Stamford, were opened to the public, by the kind permission of Mr. and Mrs. Hopwood, on Monday, August 5th (Bank Holiday), in aid of the Gardeners' Orphan Fund. Sixpence each was charged for admission, and 6d. more for tea, the materials for which were kindly given by Mrs. Hopwood for the benefit of the Fund. The sum of £3 16s. 3d. was taken for admission and tea, 12s. for fruit and flowers sold, 1s. 10d. by collecting boxes—total, £4 10s. 1d. After paying expenses of printing and advertising, which amount to £1 18s., this leaves a balance of £2 12s. 1d. in favour of the Fund. The morning was showery, with thunder also, which prevented numbers of people from attending. We may add that the conditions of Mr. H. J. Veitch's generous offer at the anniversary dinner in London having been fulfilled, two more children have been appointed annuitants of the Fund—namely, Robert James Todd, Chester; and Olive Chapelow, Willingham, Cambridgeshire; the non-successful candidates who received the highest number of votes at the recent election. This method of placing children on the Fund as soon as sufficient money is procured for their support, is very suggestive.

— **THE VEGETABLE CONFERENCE AT CHISWICK.**—At a meeting of the Committee appointed to carry out this project, held on Tuesday last in the Council room of the Royal Horticultural Society, Mr. H. J. Veitch in the chair, the revised schedule was presented and will be forthwith distributed. The only alteration from the schedule issued in January is in classification, the vegetables to be represented being the same as originally announced. Mr. Shirley Hibberd was appointed Deputy-Chairman of the Committee, in view of Mr. Veitch's absence during the next few weeks, and a Sub-Committee was nominated, consisting of Messrs. A. Dean, H. Herbst, J. Hudson, J. Wright, G. Wythes, with the Deputy-Chairman and Secretary, Mr. A. F. Barron,

to make the necessary arrangements for adjudication and other matters; also for the dinner of gardeners, nurserymen, and friends, to be held at the Cannon Street Hotel on the first evening of the Conference, Monday, September 24th. As the price is to be 5s. a large gathering is expected, and it is thought the date may be convenient for several country gardeners and provincial seedsmen making arrangements for visiting London on the occasion. With the cordial co-operation of growers of vegetables a large, diversified, instructive, and enjoyable gathering may be expected. The Conference will then be what its promoters hope—a great success.

— GARDENING APPOINTMENT.—Mr. Wm. Rye, late gardener to R. N. Hooper, Esq., Stanshawes Court, Chipping Sodbury, has been appointed head gardener to Captain Belfield, Malmaison, Frenchay, near Bristol.

— THE SPHINCTER GRIP ARMoured HOSE COMPANY desire us to announce that they have just acquired a patent for a new wire mat, which they claim surpasses all others, being self-cleaning, not requiring shaking or beating, and will not rust.

— A STORM of an unusual character visited the neighbourhood of Toddington, eleven miles north-east of Cheltenham, on Sunday evening. After a downpour of rain there was a heavy fall of large hailstones, covering the ground to over an inch in depth. Many of the hailstones were like solid pieces of ice, the largest measuring $1\frac{1}{2}$ inch in circumference. Many plants are injured. The ground under Chestnuts is covered with fragments of leaves; Lettuces look as if they had been shot; Brussels Sprouts have most of their leaves broken down; and most green vegetables are more or less riddled by the hailstones. Onions were so much bruised as to smell quite strong after the storm. Chrysanthemums have had a good many leaves cut off, as well as some tips cut out. Tomatoes have suffered a good deal; those in the open ground have most of their leaves cut off, the stems very much bruised, and considerable injury is done to the fruit; but the injury to the fruit will be more apparent in a few days' time. A cold night followed the storm, as may be gathered from the fact that some of the hailstones remained till far into the following day.—E. BUTTS.

— ROYAL BOTANIC SOCIETY OF LONDON.—The fiftieth anniversary of this Society was held in the Gardens on Saturday last, Mr. John Birkett in the chair. The reports of the Council and Committee of Auditors for the year were read. From these it appears that though the competition of the present is more severe than at any previous time in its history, the year has been a very successful one. The accounts submitted show a gratifying increase in every branch of revenue over the last and for several previous years. The number of Fellows elected—viz., 109, is above the average, and the receipts from the various exhibitions amount to £4022 6s., making, with subscriptions, &c., a sum total of £7378 13s. 7d., or an excess over last year of above £2000. In the more scientific work of the Society the same improvement is seen. 744 students have received free admissions of from one to three months each, and 42,000 specimens of plants and flowers cut for study and examinations by the various colleges, hospitals, and medical schools in London. The collections of medicinal, economic, and interesting plants have been largely increased, and their usefulness added to by more favourable disposition and greater space being granted them. His Highness the Duke of Teck and Mr. H. L. Antrobus were re-elected President and Treasurer, and the meeting closed with unanimous thanks to the President, Council, Secretary, and executive officers.

— THE WEATHER IN JULY.—July was changeable, with a few very cool nights. Some of the days were warm, but only eight were bright. The wind was westward seventeen days during the month. Total rainfall was 1.60 inch, which fell on sixteen days, and 0.36 of which fell on 23rd. Barometer highest 30.49 at 9 A.M. on 1st and 2nd; lowest, 29.50 at 9 P.M. on 25th. Highest shade temperature, 80° on 30th and 31st; lowest, 40° on 24th; lowest on grass, 38° on 17th. A good deal of thunder during the month. Garden spring running 23 gallons per minute on 31st.—W. H. DIVERS, *Ketton Hall, Stamford.*

— ALOYSIA CITRIODORA.—The young shoots, if taken off before they become hard and woody, inserted in light sandy soil, and kept close under handlights placed in a cold frame, will root quickly provided the soil is never allowed to become dry till the cuttings are rooted. Another important point is to take the cuttings from plants in the houses where they have been well syringed; those from the open air are frequently too hard to strike well, and it is in consequence of such shoots being used that "the Scented Verbena" has the reputation of being a

little difficult to strike. At any time of the year that young shoots can be obtained they may be rooted with success, although they strike more freely during the spring and summer months.—H. D.

— ONE of the best early flowering Jasmines is JASMINUM REVOLUTUM for a wall; its dense green foliage makes a capital setting for the bright yellow flowers freely produced. A close annual pruning in the autumn will suffice to keep a specimen within bounds for many years. On a western aspect under a window about 5 feet high to the sill this Jasmine flourishes well; the new growth and freely produced blossoms rise over the window sill and partly up the glass, which has a pretty effect when viewed from the inside of a room.—T.

— BLACKBIRDS.—I do not know what others have to say on this subject, but my experience is that under the "Wild Birds' Preservation Act" they have become a great nuisance. It is almost impossible to keep fruit of any sort except nuts, and netting everything is impracticable and expensive. Catching and also shooting lessens them for a day or two, but fresh flocks come from the woods and fields and take their places. It is not unusual in the early morning to open one's window and drive a score or more from a Gooseberry bed. Now, what may others have to say, and what is the most economical and best way to deal with them?—J. HAM.

— THAT there is more than one variety of STEPHANOTIS FLORIBUNDA few people will deny. I lately saw a striking instance of this in the nurseries of Messrs. Drover at Fareham, who cultivate this plant extensively. With nothing special in the method of culture, one plant had blooms much larger than those generally seen, the corolla being so much more massive as to present a striking contrast to other blooms. In a business of this sort especially a great advantage must be secured by cultivating the finest types of any kind of flower. In private establishments this rule holds good also.—A.

— GOLDEN ELDER.—This useful plant should be grown on a sunny bank in a mass or in the front of the shrubberies, as when backed up by other foliage of a dark colour the effect is improved. To render the leaves larger and of a deep golden tint pinch out the point of each shoot, when the colour will commence to deepen at once and will remain more golden all the summer than when it is allowed to grow uninterruptedly. By pinching the growths a much more compact growth can be assured than when allowed freedom. The tallest bushes can be regulated to a nicety to give the best effect, as in a sloping position a larger area of golden foliage is seen than when the front row of plants is allowed to grow the tallest. By timely and judicious pinching a better effect is obtained than by allowing the growths to ramble at will.—E. M.

— ATHERSTONE SHOW.—A correspondent writes:—"By this post I send an account of the Atherstone Flower Show. I promised the Committee I would endeavour to get a report in the *Journal of Horticulture*, and should feel much obliged if you would give a short space to it. The Show is one of the best in the Midland counties, and the quality of the cottagers' exhibits was beyond praise. You will see that financially the Exhibition was a great success." [Both this letter and report were misdirected, and only reached this office in time for the insertion of the above few lines. Short original reports of shows are at all times preferred to long extracts from newspapers.]

— VIBURNUM OPULUS STERILIS.—This Guelder Rose is the most showy of the Viburnum family, and is much appreciated in the shrubberies, where it produces its snowball-like heads in great profusion, if it be accorded a favourable position as to light and freedom from other shrubs. To supply flowers for cutting it is also valuable, and for wreaths it is most useful. Much depends upon the method annually practised in the matter of pruning this shrub. If it be closely cut in every year, few flowers may be expected. The best plan is to allow plenty of space for it to grow, treat it liberally by adding a small portion of manure to the roots annually in the autumn, which will assist it in making vigorous growths during the summer, and from these growths the flowers will be produced the following season. All the pruning needed when the plant is either covering too much space or getting too thick of branches is to remove the most weakly, allowing space for the stronger to develop and ripen their growth more thoroughly. If a plant show signs of exhaustion, cut it hard in to the old wood, when it will break into new growth, and in this manner reinvigorate itself.—S.

— TUBEROUS BEGONIAS AT MANCHESTER.—Under the auspices of the Northern branch of the National Carnation and Picotee Society the annual Exhibition was held at the Royal Botanical Gardens, Old

Trafford, on Saturday. The weather was not favourable for visitors, but there was a considerable number present in the afternoon and evening. The exhibitors were numerous, and represented a wide area, and the Show was excellent, especially in the class for Picotees. There was also a display of Gooseberries, for which the Carnation Society offered prizes. Some of the berries were of enormous size, one weighing 24 pennyweights 14 grains. The principal prizewinners were Mr. J. Harvey of Stone, and Mr. J. Threlfall. Not the least attractive part of the Exhibition was a beautiful collection of Begonias from the nurseries of Messrs. Ryder & Son, Sale, to whom the Council of the Botanical Society awarded a gold medal. Great advances have been made in recent years in the cultivation of Tuberous Begonias, and Messrs. Ryder have shown what can be attained by careful and scientific hybridisation. The doubles were exceedingly fine, one of the most remarkable specimens being a large scarlet flower called Brightness of Sale. Another immense crimson variety was Samuel Ryder, forming a pretty contrast to Charming Bride, a pure white flower. Messrs. Ryder hold that it is a mistake to suppose the Begonia is simply a greenhouse plant, and in proof of this they exhibited a large collection taken from the open ground at Sale.

— DR. HOGG PEA.—I was fortunate in procuring seeds of the true Dr. Hogg Pea in the spring. I sowed them along with Carter's Lightning on the same day; they flowered the same day, and were ready to pull on the same day. The difference between them lay in the Dr. being the more robust, heavier cropper, and by far the best flavoured. After the long drought in June we had continued heavy rains, which caused a second growth in the early Peas. On looking at them one day I was surprised to find that all the blooms on the Dr. were double. I have sent you a box of the blooms by this post. No one about here has seen such a thing before. Please let me know if it is a common occurrence.—C. W. [We have seen the so-called Dr. Hogg Pea, differing materially from the true variety as raised by Mr. Laxton. It is a first early Pea, and still one of the best in cultivation. We have seen similar examples of flowers in which most, but not all, the stamens are converted into petals, but such changes are not common, and the few that have come under our notice have occurred late in the season.]

— EFFECT OF CAMPHOR ON SEEDS.—Certain curious and all but forgotten experiences of much interest to agriculture and gardening have lately been revived by a German savant. Very many years ago it was discovered and recorded that water saturated with camphor had a remarkable influence on the germination of seeds. As of many other useful hints, the world took no notice of this intimation; but a Berlin professor, having seen the record of it, appears to have established the fact that a solution of camphor stimulates vegetables as alcohol does animals. He took seeds of various sorts, some being three or four years old, and possessing a slight degree of vitality, and placed them between sheets of blotting paper. Some of these he wetted with pure water, and others with camphorated water. In many cases the seeds did not swell at all under the influence of the simple moisture, but in every case they germinated where they were subjected to the camphor solution. The experiment was extended to different kinds of garden seeds, old and new, and always with the result of showing a singular awakening of dormant vitalism and a wonderful quickening of growth. It also appears from the professor's researches that the young plants thus stimulated continued to increase with a vigour and vivacity much beyond that of those which were not so treated. On the other hand, when pounded camphor was mixed with the soil, it appeared to exercise a rather bad effect upon the seeds. The dose in this latter case was possibly too strong. At all events, this action of camphor is worthy of an examination by seedsmen and gardeners, and even farmers might determine how far Wheat and Barley may be profited by the strange power this drug appears to possess over the latent life of vegetable germs.—(*American Horticultural Art Journal*.)

BERBERIS ANGULOSA.

THE *Botanical Magazine* for the present month gives a coloured figure of the above named Barberry, and the plant is interesting, as apart from its attractive yellow flowers and richly coloured foliage in autumn the deep red good sized fruits are eatable and less acid than those of the common Barberry.

"Berberis angulosa is a rare Himalayan species, and one of the largest flowered and fruited of the thirteen found in that mountain range; it is also one of the most distinct, though referred by Lindley to the race-mose *B. aristata*, which he has by error published as *B. umbellata*, Wall.

(Bot. Reg. 1844, t. 44). It was discovered early in the century by Mr. Blinkworth in Kumaon, and gathered later by Wallich in Nepal, and by myself in the adjacent province of Sikkim, at elevations of 11,000 to 13,000 feet. The only evidence of its occurring elsewhere in the Himalaya is the specimen figured, which was sent in flower to Kew by Thomas Acton, Esq., of Kilmacurragh, Rathdrum, Ireland, in May 1888, and the fruit in October of the same year, with the information that it was raised from seed obtained from Cashmir by his brother, Colonel Ball Acton. In the Kew Herbarium there are specimens raised from seed sent to the Edinburgh Botanical Garden by Mr. Gumbleton in 1885, and others sent to Kew by Mr. Gumbleton himself in 1887.

"In Sikkim *B. angulosa* forms a shrub 4 feet high and more, often accompanying the beautiful little *B. concinna*. It grows at a greater elevation than any other of the larger shrubby species except *B. macrosepala*, and forms a striking object in autumn from the rich golden yellow and red colouring of the foliage.

"An erect bush, 4 feet high and upwards, with stout angled and grooved erect puberulous branches; spines three to five-branched, slender. Leaves deciduous, fascicled, 1 to 1½ inch long, sessile or narrowed into a short petiole, obovate or oblanceolate, quite entire or with a few spinous teeth on the thickened margin; tip rounded, apiculate or aristate, thinly coriaceous, often puberulous beneath, opaque above, rather shining beneath, scarlet and yellow in decay. Peduncles solitary or fascicled, very rarely two-fld., decurved, about two-thirds of an inch long. Flower one-half to two-thirds of an inch in diameter, pale golden yellow. Outer sepals narrowly oblong, inner as long but nearly twice as broad; petals obovate, tip rounded, pale yellow. Berry two-thirds of an inch long, globosely obovoid, scarlet, five to six seeded; style very short or 0, stigma pulvinate."

SAFFRON.

"MEDICUS" asks us if we can tell him "something about Saffron whether it is a native plant or not, and if cultivated to any extent in this country." We do not know to what extent it is grown, but evidently more importance was attached to its culture in past times than now. Mr. J. Clark, in his "Notes on the Name of the Town of Saffron Walden," has the following statements:—

"*Crocus sativus*, Saffron Crocus, or Saffron is an autumnal Crocus, the corolla of which is divided into six equal segments. The petals are of a purple blue colour. It has three linear-oblong golden stigmas, which are the Saffron. It flowers in October, and the leaves continue to grow all the winter.

"In October the flowers were gathered early in the morning, and conveyed home in baskets. Then commenced the process of picking out the stigmas (or chives as they were called). These were then pressed into cakes, and dried on kilns constructed for that purpose.

"Saffron was at that time thought a most valuable medicine for many diseases. The produce appears to have varied from 8 lbs. to 20 lbs. per acre.

"The price of Saffron at different periods may be estimated from the presents made by the Corporation to the Sovereigns who visited Walden.

"The quantity of Saffron varied, but it was usually presented in a silver cup or salver.

"Queen Elizabeth received a cup in 1571, but no mention is made of the quantity.

"1614. James was presented with a cup and 1 lb. of Saffron, which cost £3 3s. 4d., a considerable sum in those days.

"1631. 5½ ozs. of Saffron given to Charles I. are charged at 18s. per ounce.

"1665. 20 ozs. of Saffron for Charles II. are charged £5 15s.

"1689. 14 ozs. for William III. cost £3 11s. 3d.

"1717. The Saffron to put in the salver given to King George, cost £1 6s. 6d.

"The first introduction of the plant into Walden is attributed to Sir Thomas Smith, born here in 1512 (the house he was born in is in the Market Place). He was Secretary of State to Queen Elizabeth and Edward IV. But although our illustrious townsman was an extensive grower of Saffron, he certainly was not the individual who first introduced it, for it is evident from the writings of Fleming, a clergyman who resided in the neighbourhood in 1584, that it was extensively grown here in 1540, when Sir Thomas was but young. That the town was celebrated for its culture in 1549, in the time of Edward VI., may be inferred from the circumstances that on its charter being granted by that monarch, the Corporation bore three Saffron plants in their arms. The town must then at that period have been famous for its cultivation.

"Holinshed, who wrote early in the time of Elizabeth, states that the Saffron grown about Saffron Walden (sometimes called Waldenbury) was first planted there in the time of Edward III., and Lord Braybrooke, in his history of Audley End, states that the town took the name of Saffron in the reign of Edward III.

"It was a tytheable commodity by the Abbot and Vicar of Walden in 1444, which was sixty-eight years before Sir Thomas was born; and at a court held for the manor in 1518 the owners of certain hogs found trespassing in the Saffron beds were prosecuted. These facts sufficiently prove that Sir Thomas was not the introducer, but that it was cultivated long before his time. The popular opinion might have originated in his

successful attempts to revive the culture of the plant at a time when it was much neglected.

"Saffron is still retained in the 'British Flora' as a naturalised plant; but I am of opinion that it does not naturalise, as no traces of it are to be found in this neighbourhood. The only instance in which I ever saw the plant growing wild was when this building was erected, and large quantities of earth removed, a few plants came up at the west end of the building, but the next season they all disappeared."

[The name of Saffron is of Arabic origin, and is thus traced in Lyte's "Herbal," published in 1578:—"In the Arabian speech Zahafaran, from thence it was called in French and high Dutch Saffran; in base Almaine Saffraen, and in English Saffron."]

Saffron was in reputation as a medicine, and was cultivated in Greece when Theophrastus wrote, about three centuries before the Christian era. Writing of "odours," he says that the Saffron (*Crocium*) prepared in Aegina and Cilicia was the best. Pliny says that it could not be grown profitably in Italy; and he also states that the Saffron most esteemed was that of Cilicia, especially that grown on Mount Coryeus; next in estimation was that from Mount Olympus; and, lastly, that from Centuripa in Sicily. Columella, Palladius, Varro, and Vegetius, all give some slight directions for its cultivation, as does Florentinus (*Geoponica*, xi., 26) who was a Greek writer on the cultivation of plants early in the third century.

Some have thought, considering that the Romans introduced Vines and other plants which they valued into Britain, that Saffron might have been one of them; but we think a tolerable test of the source from whence a new plant has been imported is the name by which it continues to be popularly known. The Vine and the Cherry, for instance, were introduced by the Romans, and retain names corrupted from those by which they were called by that nation. Saffron retains a name of Eastern extraction, and this inclines us to believe that there is some truth in the tradition preserved by Hakluyt (ii., 164), that bulbs of the plant were smuggled from the Levant by a palmer, and introduced into this country. Gough, Camden, and others of our oldest historians agree in stating it is "a commodity brought into England in the time of King Edward the Third." A time of crusading and pilgrimages.

Conrad Heresbach, writing in 1570, states that it was then cultivated about Spire and other places in Germany, and three years later our Tusser, whose farming experience was gained chiefly in Essex, writes thus in "August's Husbandry," as if Saffron were then commonly cultivated:—

"Pare Saffron between the two St. Mary's days,
Or set, or go shift it, that knoweth the ways,
What year shall I do it, more profit to yield?
The fourth in the garden, the third in the field.
"In having but forty foot, workmanlike dight,
Take Saffron enough for a lord and a knight.
All winter time after, as practice doth teach.
What plot have ye better for linen to bleach?"

This needs little comment—a plot of 40 feet square produced enough for a nobleman's establishment. The bulbs were taken up and planted in fresh ground every third or fourth year; and during the winter the green leaves of the Saffron (*Crocus sativus*) remaining after the stigmas were harvested, made a clean surface on which to outspread the family linen for bleaching.]

ROYAL HORTICULTURAL SOCIETY.

AUGUST 13TH.

THE Drill Hall, Westminster, was well furnished on this occasion, chiefly with nurserymen's exhibits, which were well worthy of inspection. Messrs. James Veitch & Sons exhibited one of the finest collections of variegated and ornamental trees and shrubs ever seen, represented by sprays in pots, resembling small bushes; also a bright group of Gladioli of the Lemoinei type; and boxes of Java hybrid Rhododendrons. Messrs. Paul & Sons, Cheshunt, had an imposing display of Roses, large and small, and various other interesting plants. Messrs. H. Cannell & Sons had a group of exceedingly floriferous double Begonias, some of the blooms of enormous size. Mr. T. S. Ware had a collection of very fine Dahlias, a striking group of Gaillardias, and a new yellow summer flowering Chrysanthemum, which was honoured with a certificate; and Messrs. J. Cheal & Sons contributed an effective display of Dahlias, including varieties of marked excellence. The above collections, with sundry other exhibits, imparted a gay and diversified appearance to the hall, to which fruiting plants of Tomatoes in pots from Chiswick materially contributed.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, Messrs. Shirley Hibberd, R. Dean, W. C. Leach, W. Goldring, H. Herbst, J. Walker, F. Ross, H. Cannell, W. Holmes, B. Wynne, C. Noble, J. Frazer, G. Paul, G. Nicholson, and Dr. M. T. Masters.

In Messrs. Veitch's group, for which a silver Banksian medal was awarded, the very distinct *Nepenthes Curtisi* superba was prominent. The plant had four handsome pitchers, dark brown clearly barred with yellow, and was adjudged a first-class certificate. Similar awards were granted for *Rhododendron* Duchess of Fife, with large, well formed, straw-coloured blooms, and to *Gladiolus nanceianus* President Carnot (Lemoinei), with large deep red and yellow blooms. Awards of merit were granted for *G. Aleace*, primrose, and *Chesnier*, yellow and white.

In Messrs. Cannell's group (silver Banksian medal), *Begonias* Mrs. Sitkie, pink; Mrs. Cayzer, yellow; and A. Blanc, rose, were accorded awards of merit; as was *Negelia* or *Achimenes pyramidalis*, a compact floriferous variety with rosy red flowers; and a vote of thanks was awarded for *Colcus Vesuvius*, with very large red and yellow leaves. Small plants of *Rochea falcata* with bright scarlet heads of flowers were effective, and specimens of the pure white double *Begonia Octavie* were remarkable for their floriferousness.

From Messrs. Cheal's (bronze medal) group the single *Dahlia* James Scobie was selected for an award of merit. It is a large well formed flower flaked with orange and scarlet.

A silver Banksian medal was recommended for Mr. Ware's excellent contribution, and an award of merit for single *Dahlia* C. H. Harvey, and summer *Chrysanthemum* The Shah. This is an improvement on the good old *Felicity*, being dwarfier in habit and deeper in colour, and will be of substantial value for pots, flower beds, and borders. A first class certificate was awarded to Messrs. J. Laing & Sons for *Pteris tremula Smithiana*, a distinct and elegant form of this free and useful decorative Fern. A silver Banksian medal was recommended to Messrs. Paul & Son for their Roses and other flowers. Messrs. Hawkins and Bennett exhibited plants of their double Zonal *Pelargonium* Duke of Fife, with bright scarlet flowers freely produced, for which an award of merit was awarded. A botanical certificate was recommended for *Tritonia scurigeria* exhibited by Mr. O'Brien, and a vote of thanks accorded to Mr. G. Ross for *Physianthus albens*. Messrs. Daniels Brothers exhibited glowing bunches of *Godetias* Duke and Duchess of Fife, and Mr. Beale several plants growing healthy, and some flowering freely in fertilising moss; he also staged other garden requisites.

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair, and J. O'Brien, G. Hill, H. J. Veitch, C. Pilcher, J. Dominy, H. M. Pollett, and H. Ballantine.

Mr. G. Norman, gardener to the Marquis of Salisbury, exhibited a dozen cut racemes of *Saccolabium Blumei*, most of them being 2 feet in length, for which a cultural commendation was worthily adjudged. Mr. H. Ballantine, The Dell, Egham, was granted a first-class certificate for the elegant and beautiful *Cypripedium Orphanum*, the result of a cross between *C. Druryi* and *C. barbatum*. He also exhibited fine cut specimens of *C. Morganæ*. First class certificates were awarded to Sir Trevor Lawrence, Bart., M.P., also to Messrs. Hugh Low & Co., for *Vanda Kimballiana*. The plant is of neat somewhat compact habit of growth, and the flowers, which are an inch or more across, with white sepals and petals and purplish violet lips, appear to be freely produced. A cultural commendation was awarded to *Lælia monophylla* from the Burford Lodge collection, and votes of thanks for *Saccolabium cœleste* and *Cypripedium Stonei superbiens*. H. Tate, Esq., Allington Beeches, Liverpool, was accorded a vote of thanks for the rich and beautiful *Cattleya Warscewiczii Hardyana*, which had been previously certificated.

FRUIT COMMITTEE.—R. D. Blackmore, Esq., in the chair, with Messrs. John Lee, J. Willard, J. Cheal, Harrison Weir, F. Q. Lane, W. Warren, A. H. Pearson, J. T. Saltmarsh, G. Bunyard, H. Balderson, G. Norman, G. Cliffe, J. Hudson, P. Crawley, J. Burnett, J. Wright, and Dr. Hogg.

The Gunton Park scarlet flesh Melon was again sent by Mr. W. Allan, very large handsome fruit, the result of a cross between *Hero* of Lockinge and *Austin's* Incomparable, juicy but lacking in flavour, hence passed. Mr. William Smythe, The Gardens, Basing Park, Aiton, sent a medium-sized oval-shaped distinctly netted green-fleshed Melon. It was deep in the flesh, rich in flavour, and a first class certificate was unanimously awarded to it under the name of Basing Park Green Flesh. Mr. H. Divers sent a medium-size well-netted fruit of *Ketton Gem* Melon, but it was distinctly overripe, and no award was made. Mr. F. Nicholas, The Gardens, Upleatham Hall, sent a closely netted fruit of an oval shaped Melon, very tender and unusually sweet, but somewhat lacking in aroma, and lost a certificate by a considerable majority of votes. Mr. Joseph Brutton, Yeovil, sent *Brutton's Perfection* Melon, that had been certificated at the Crystal Palace, but it was decidedly overripe, and no opinion could be formed of its value.

A seedling Apple was sent by Mr. F. R. W. Rich, but extremely acid, and passed. It was thought it would do for a "roadside" Apple, on the ground that boys would not eat the fruit. Mr. W. Roupell sent from Roupell Lodge, Streatham, excellent samples of Irish Peach, Red Astrachan, Red Juneating, and Devonshire Quarrenden Apples—well-grown highly coloured fruits in excellent condition, and a cultural commendation was unanimously awarded.

Mr. H. Balderson sent a bunch of a new black Grape raised by Mr. Wattam, Shendish Gardens, Hemel Hempstead, raised from *Muscate* of Alexandria and grafted on the *Muscate* Hamburg. The berries had much the appearance of Black Alicante and were similarly soft in texture, but with a decided *Muscate* flavour. As it was grown on an evidently unripened lateral the Committee desired to see it again, as it might possibly be firmer in texture from ripened wood. Mr. James Douglas, Great Gearies, exhibited bunches of a white seedling Grape, somewhat resembling *Buckland Sweetwater* in appearance, but much firmer in the flesh, and although it was considered agreeable and refreshing in quality no award was proposed; all the same it is a good white companion to the Black Hamburg, and will perhaps be heard of again. Messrs. H. Lane & Son sent well grown bunches of the American Strawberry Grape, and a vote of thanks was accorded.

Mr. J. Green sent fruits of the Peach Tomato, distinct in colour and

character, but it was passed; a variety similar, if not identical, is grown under the name of Luscious. Some admirably grown Tomatoes in pots were exhibited from Chiswick similar to the one figured on page 69, for which a cultural commendation was unanimously awarded; and a first-class certificate granted to a new variety named Chiswick Hybrid, the result of a cross between Horsford's Prelude and Perfection, the fruits of medium size, smooth, deep red, of good quality, and borne in large clusters, characteristic of the first-named variety.

SHEDFIELD LODGE, HANTS.

In the ground attached to this, the residence of Mrs. Franklyn, an Exhibition was recently held, the place being specially suited to the purpose. The garden is well sheltered from south-west and easterly winds, there being some grand Elms, Oaks, and other forest trees, also choice Conifers. The flower garden is situated on two sides of the house, the beds being informally arranged and planted. The combinations are so effectively displayed that I was compelled to jot down a few of the more striking, as the record might prove useful in future. One large bed was filled with small plants of Tuberous Begonias intermixed with Abutilon Thompsoni, the ground being carpeted with Sedum glaucum; the bright red flowers of some of the Begonias contrasted favourably with the "sentinel" like Abutilons and the glaucous grey of the undergrowth. Another long narrow bed of Begonias was rendered attractive by associating with them down the centre thinly some plants of Ricinus africanus, and on each side well grown and coloured plants of Zea gracillima, the pendulous habit of this striped Maize rendering it appropriate for the purpose and ornamental. Another bed was filled with seedling Verbenas of mixed colours, with here and there a plant of Ricinus africanus. A mass of Heliotrope Swanley Giant had immense trusses of bloom, interspersed here and there with Ricinus Gibsoni and Nicotiana affinis. A circular bed of small shrubs thinly planted was made the home of Iceland Poppies in a variety of colours which belong to that section. A bed of the double Zonal Pelargonium Guillon Mangilli showed its adaptability for bedding purposes. Festuca glauca made a neat edging to a bed of scarlet Pelargoniums, as did Poa trivialis variegata to a bed of Delphiniums. Single, Cactus, and double Dahlias were flourishing, being well in flower even at this early season. The admirable condition of the garden reflects much credit on Mr. Chequer.—E. M.

CULTURE OF CAMPANULA PYRAMIDALIS.

THIS fine old plant seems for many years to have been under a cloud, so seldom has it been seen in fashionable quarters; but as it has claims which will not be set aside, it is almost certain that it will soon come up again with almost the freshness of a novelty, and gardeners may successively find out that two or three plants tenfold more worthless might with advantage be transferred from the greenhouse to the rubbish heap, to make room for the steeple Bellflower of olden times.

Although it has been treated with coldness by many of those who ought to have known better, it has been all along a favourite window plant with amateur cultivators, and I can say without fear of contradiction, that no other plant grown combines in itself so many of the qualities essential to plants suitable for window decoration. In the first place it is strikingly handsome; it is no minute beauty which we must bend over, and after due examination pronounce pretty, but it levies the tribute of admiration at first sight from all who see it. It is not, in general, thought "the correct thing" to stare in at people's windows; but when they contain one or more of these blue pyramids, 8 or 9 feet high, there is no help for it. It is also easy of cultivation, not subject to the attacks of vermin, and, which is a great desideratum in window plants, it does not obstruct much light. As an example of what can be done with it as such, I have seen two plants grown in the windows of a large public school. They had been in flower for nearly two months, and were likely to continue so for a month longer. One of them was 8½, the other 9 feet in height, and their cultivator, on my remarking that they were only in 8-inch pots, informed me that in general he found every inch in the diameter of the pot counted a foot in the height of the flower spike; thus, if the last shift was into 6, 8, or 10-inch pots, the plants would throw up stems 6, 8, or 10 feet high.

The reason why this Campanula is so seldom grown will most likely be found in the fact that, as things go, it is considered rather slow. In these days, when Vines have to carry crops at eighteen months old, and when the old saying, that "He who plants Pears plants for his heirs," has become absolute nonsense, it seems folly to expect that any considerable number of people could be found who would patiently wait nearly three years for a spike of Blue-bells, however grand; but if we begin at the beginning, and raise our own plants, we must do so.

Campanula pyramidalis is generally propagated either by seed—and seedlings make the best plants—or by division of the old plants after flowering. The seeds should be sown in heat about the middle of March in light, sandy soil, and merely covered with a dusting of fine peat and silver sand. When large enough to be handled, prick out the seedlings singly in small pots, and continue them in heat until the pots are filled with roots; afterwards place the plants in a cold frame or pit, giving small shifts when necessary, the last for the season taking place not later than the beginning of August. For this use a rich but porous compost, and take care to insure perfect drainage. During winter the plants should be kept rather dry, in any place where damp rather than frost can be guarded against, and for that purpose the sill of a large,

light window is all that can be desired. Receiving the same treatment during the second summer, with the addition of frequent waterings with liquid manure, next August should find them in 8 or 10-inch pots, leaving room for one more shift in spring, just before the flower stems begin to rise. After the roots have penetrated this, and all the time the plants are in flower, continue to give rather weak guano or other manure water every second day, and soon the great blue Gothic spires, which more than sufficiently repay all these little attentions, will be worth looking at.

After the flowers are past, cut the stems down, and in the following spring, when growth has begun, divide the old stools into as many plants as there are growing points. Treated the same as seedlings, these will flower in the second season, but I have always found plants from seed the freest growing.

Of course plants are to be bought if we know where to purchase them, and thus much trouble is saved; but when once a beginning is made, and a dozen plants or so are raised every year, they form a succession, and the weary waiting for more than two years, which so harasses the imagination, is lost sight of.

The white variety is scarcely so robust, but when grown along with the blue is equally ornamental. As plants for the mixed or herbaceous border, these Campanulas are very fine, although there they have not the same stately dimensions nor delicate colours which characterise them under glass. A warm sheltered border, backed by a wall or shrubbery, is the situation which suits them best.—A. G.



CHRYSANTHEMUMS—TAKING THE BUDS.

THE essay given by Mr. Tunnington at Sheffield, and published at page 49, substantiates in a great measure the critique on Mr. Molyneux's book which was read by Mr. Garnett at Leeds in December, 1886, and part of which was published in the Journal a short time afterwards. It appears to me that the great difficulty is to get crown buds to appear near a certain date; for instance, late varieties such as Boule d'Or, Eve, Meg Merrilies, &c., must show their buds from the 8th to the 20th of August in order to have the blooms at their best about the same dates in November. As far as my experience goes I have failed to bring about this result by letting the plants grow naturally however early they are propagated, notably Boule d'Or, which is one of the latest I am acquainted with. Cuttings of this variety inserted in November, and grown without topping, generally make their first break about the middle of June, and the crown bud appears about the first week in September, which is much too late for securing blooms at the same time as the general collection.

To remedy this I treat most of my plants of Boule d'Or in the same manner as Mr. Molyneux recommends for Eve and Mabel Ward, only about a week later, and generally secure crown buds at the time required, and notwithstanding the unusually warm weather just past, the buds will not be too early. I have, however, again tried one plant of this variety without topping, which at the present time is upwards of 5 feet high, and has advanced 14 inches since making its first break.

Again, as regards the early varieties, such as Elaine, Mdle. Lacroix, Comte de Germiny, &c., what becomes of them if grown naturally and the early crown buds secured? The blooms will be much too early, but if topped from the beginning to the middle of July they will, if in good condition, make a strong growth and show a secondary crown bud about the middle of September.

Some varieties with me make quite a succession of crown buds—three or four—before they come to a stop; these are notably M. Tarin and Fair Maid of Guernsey, the latter of which must not be taken too early, or the buds will resemble small drumsticks, and the flowers be "hen and chickens."

I am quite sure there are many intelligent growers who thank Mr. Tunnington for his Sheffield paper, also Mr. Garnett for his critique, as I know them both to be men of high standing in the Chrysanthemum world.—A FOUR-YEARS EXPERIMENTER.

NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL EXCURSION.

FOR several years past the members of the above Society have adopted the laudable custom of meeting once during the summer months to discuss in a friendly way the prospects of the Chrysanthemum season, and at a time which is free from the bustle and excitement of the exhibition period. Mr. Holmes started the idea in the first place, and his suggestion that such a meeting could be rendered more enjoyable and instructive by arranging a trip to some place of horticultural interest was immediately seized upon as the right one, with the result that he has been annually desired to plan a fresh excursion. This year, after careful discussion and several suggestions had been considered, it was decided that the historic seats of Hatfield and Knebworth should be visited if the necessary permission could be obtained from the Marquis of Salisbury and the Earl of Lytton, their respective owners; and this being

readily accorded in both cases, the circular of invitation and programme were issued to the members of the Society. There was a good response, for at the appointed time (10.15 A.M. at King's Cross, Great Northern Station, on Monday, August 12th) no less than sixty-five assembled, including representatives of widely separated districts. All were glad to welcome again their past President, Mr. Sanderson, who looks as sturdy, vigorous, and energetic as ever. Mr. R. Ballantine was also present, with, of course, the indefatigable Hon. Secretary, who is happily fast regaining his usual health. Then, too, the presence of Mr. Shirley Hibberd added materially to the happiness of the party. Mr. Pearson of Nottingham discoursed extensively and interestingly on varied topics; and the veteran exhibitor, Mr. Donald of Leytonstone, recounted some of his past successes. Amongst others the following were noted:—Messrs. Allis, Old Warden; Barnes, Stoke Newington; Brown, South-end; Burgess, Cambridge; Jay, Winchmore Hill; Neary, Hornsey; G. Stevens, Putney; Witty, Nunhead; Bevan, Finchley; Trinder, Dogmersfield; B. Wynne, and L. Castle.

HATFIELD.

Starting from King's Cross shortly after 10.30 the party reached Hatfield Station very near the announced time 11.17, and were met by Mr. Norman, who at once conducted the party to the park entrance, a few minutes' walk from the station, and throughout the time spent with him he proved an admirable, courteous, and instructive guide. It was

take the place of its antiquated relative. The first point to which the party were conducted was the vineyard, where a succession of terraces and slopes, facing in a southerly direction, lead down to the river bed, which is there quite a respectable stream. The Vines which are supposed to have occupied this site in Hatfield's early days have long ago vanished, and the slopes are now occupied with Yew, kept closely clipped, while the paths and the terraces are really avenues of the same, originally probably intended as hedges for protection, but the plants have assumed the dimensions of tall trees with slender bare stems 30 or 40 feet high, their upper branches circling over and interlacing to form quite dense bowers, giving a peculiar appearance to the walks. In the centre a vista is cut from the upper terrace commanding a view of the river, and beyond that it is continued through a green arch of Horse Chestnut to the old kitchen garden, some distance on the other side.

From the vineyard the visitors journeyed back through the park admiring the old Oaks, Beeches, and Limes, with the thickets of Bracken covering extensive tracts, through which the deer were hastening alarmed by such a formidable host. The lake surrounded by shrubberies was next inspected, and several good views of the stately old mansion were obtained. Then we came to a quaint piece of old gardening, which might well be imitated in modern days—namely, the garden of fragrant flowers. It was a moderate sized enclosure with hedges on the lower sides, Roses and Rose arches on the upper side, four corner beds being occupied with Everlasting Peas, red and white varieties in

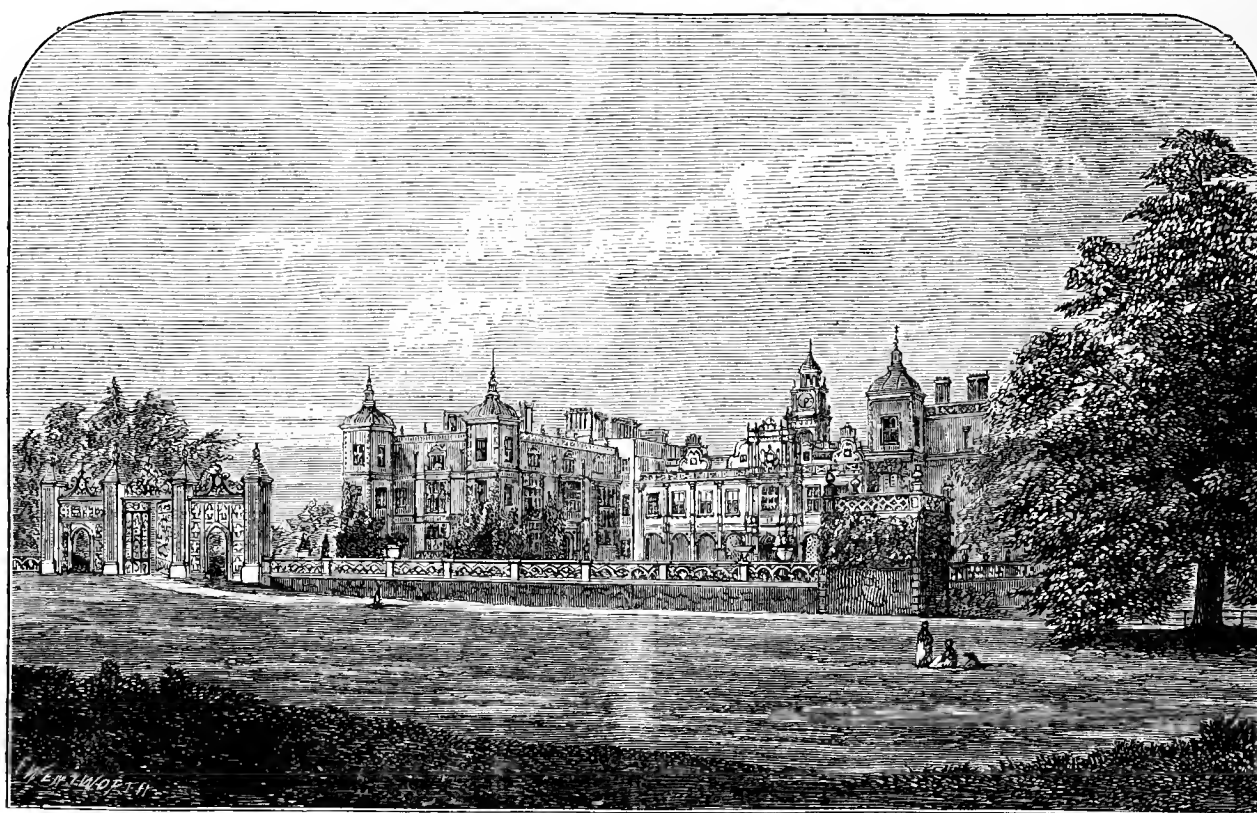


FIG. 17.—HATFIELD HOUSE.

soon found, however, that the time at disposal would only admit of a most cursory survey of the attractions of Hatfield, and it was a source of regret to many of those present that the extensive ranges of fruit houses had to be omitted. The train to Knebworth was due at a few minutes after 2 P.M., and this necessitated a hurried walk over a considerable extent of ground, and did not admit of any lingering in historic spots, or a comfortable inspection of the quaint features of this most interesting establishment. Some would have preferred remaining for the day at Hatfield, but Mr. Holmes, no doubt judging the walking capabilities of Chrysanthemum growers and admirers by his own energy, was not satisfied with so short a programme; and perhaps he was right, for all were perfectly satisfied before the day was concluded.

Passing through the handsome gates near the station and across a little bridge commanding a pleasing view of the quaint little town of Hatfield and its red tiled roofs, the avenues of old Limes were soon reached, which constitute one of the features of the park. These remind one at once of the extensive avenues of Limes in Burleigh Park, "by Stamford town," and we are informed that they were planted about the same time, and therefore rank amongst the oldest in the kingdom. Here, too, was seen the remains of an old tree known as Queen Elizabeth's Oak, which is said to have been a large tree at the time she ascended the throne, as she was sitting beneath it when the news of Queen Mary's death reached her. Now nothing but a shell of bark and wood remains, one side being filled with cement, but at the top is growing a young Oak which may possibly at some future time

opposite corners; then there were large central beds of Lavender, Carnation, Violets, Mignonette, &c., all yielding their varied perfumes to the air. It was of such an ideal garden Francis Bacon wrote in his essay "Of Gardens" (1625) in this way:—

"And because the breath of flowers is far sweeter in the air (where it comes and goes like the warbling of music) than in the hand, therefore nothing is more fit for that delight than to know what be the flowers and plants that do best perfume the air. Roses, Damask and red, are fast flowers of their smells; so that you may walk by a whole row of them and find nothing of their sweetness; yea, though it be in a morning's dew. Bays likewise yield no smell as they grow. Rosemary little, nor Sweet Marjoram. That which above all others yields the sweetest smell in the air is the Violet, specially the white double Violet, which comes twice a year, about the middle of April and about Bartholomew-tide. Next to that is the Musk Rose. Then the Strawberry leaves dying, with a most excellent cordial smell. Then the flower of the Vines; it is a little dust, like the dust of a bent, which grows upon the cluster in the first coming forth. Then Sweet Briar. Then Wallflowers, which are very de'ightful to be set under a parlour or lower chamber window. Then Pinks and Gilliflowers, specially the matted Pink and Clove Gilliflower. Then the flowers of the Lime tree. Then the Honeysuckles, though they be somewhat afar off. Of Bean flowers I speak not, because they are field flowers. But those which perfume the air most delightfully, not passed by as the rest, but being trodden upon and crushed, are three—that is, Burnet, Wild Thyme, and

Water Mints. Therefore you are to set whole alleys of them, to have the pleasure when you walk or tread."

Above this garden on the east side of the mansion is the flower garden, gay with Pelargoniums and similar plants of the conventional bedding character, but the standard Heliotropes, 3 or 4 feet high, placed out on one side of the garden were much admired. Light and dark varieties were employed, and they looked extremely well, but their appearance will be still more improved when the kinds are more fully developed. The lofty terrace wall bounding the garden on the west side is thickly clothed with Ivies of many varieties, all fresh and beautiful; but one, determined by Mr. Hibberd to be the Azorean or Fig-leaved Ivy, was notable for its distinct light green shade and its deeply cut leaves. A good space was also covered by the Algerian Ivy, another fine variety. Hurrying onwards we find that the south side of the mansion commands a fine view of an open glade in the park flanked by trees on each side, while on the west side is a curious old garden of quadrangular form containing some antiquated Mulberries and flower beds, surrounded by a covered walk formed of Limes arched overhead to form a cool shady retreat on a hot day. A glance at the conservatory and a sheltered dell of fine Conifers completed our inspection, and in a few minutes we had bade Mr. Norman farewell and were on the way to Knebworth, where something of an important character, to wit, a dinner, awaited a hungry party.

of the kind had been intended. Mr. Hibberd followed by proposing votes of thanks to the Marquis of Salisbury and the Earl of Lytton for the permission so freely accorded to visit their gardens, and Mr. Wynne had a similar proposition thanking Messrs. Norman and Kipling for their assistance. Then, after a hearty recognition of Mr. Holmes' labour in arranging the excursion, the members hastened, under the charge of Mr. Kipling, to view the house, gardens, and park at Knebworth.

KNEBWORTH.

The inspection of the mansion occupied some little time, for it is as interesting internally as it is handsome externally, but the first portion of the party was soon busily engaged amongst the outside attractions as the afternoon was shortening rapidly, and there were some who wished to return to town by the earlier of the two trains named in the programme. After quitting the house one of the first features noted were some beds of Phlox Drummondii, and throughout the garden it was subsequently found that this plant is not only a great favourite at Knebworth, but it also succeeds in quite an exceptional way. The value of Phlox Drummondii as a bedding annual have frequently been advanced, but its admirers could not have a better example of the plant for this purpose than is afforded in the garden under notice. One point in their favour was that most of the beds were in the form of Ivy baskets,

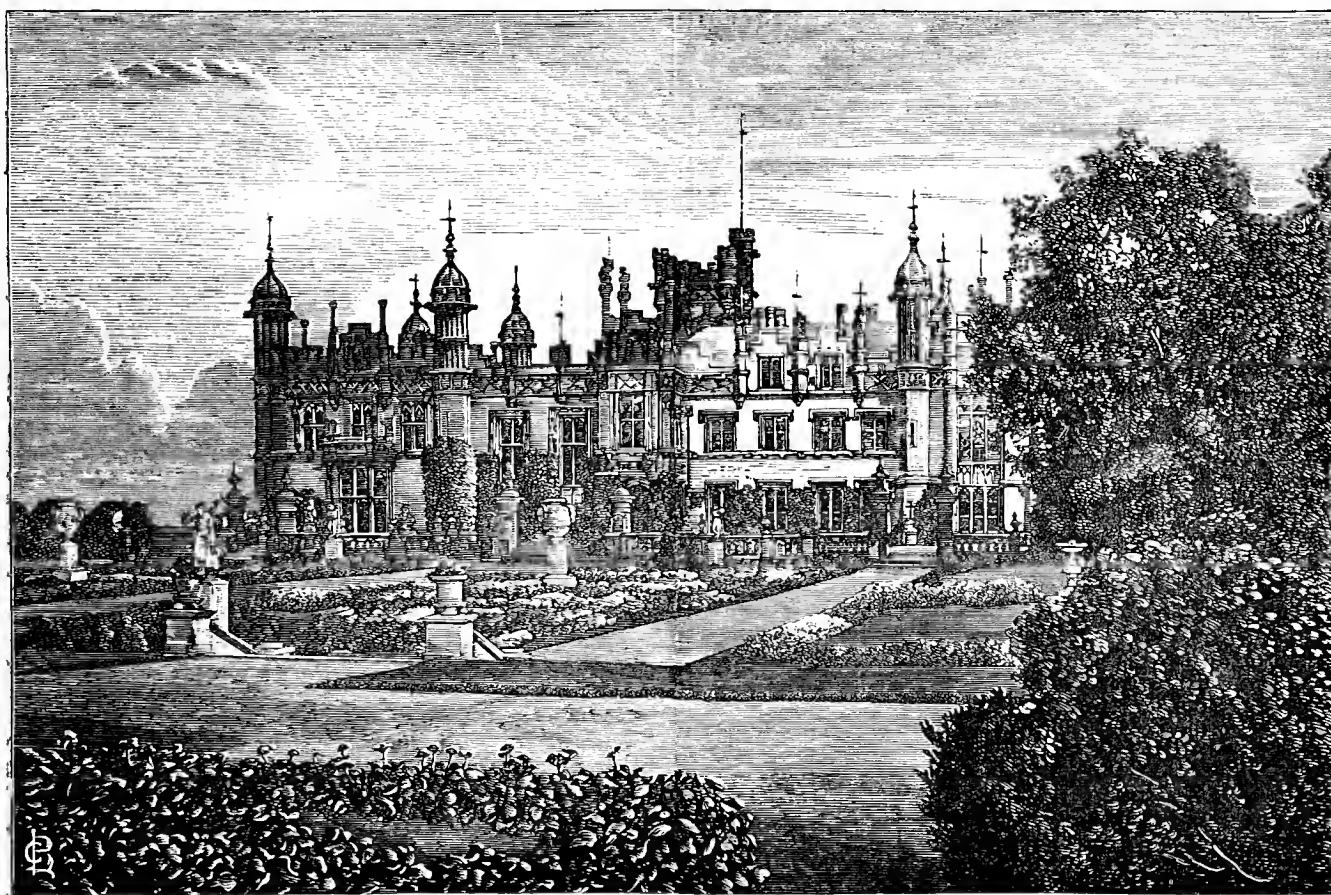


FIG. 18.—KNEBWORTH.

A somewhat long walk from the station brought the visitors to the Lytton Arms, where with all due speed they assembled in a tent and did full justice to the substantial 'are placed before them; then followed a little speech-making, but necessarily brief, as there was still much to be done; but the chief event, and one of a very pleasant character, was the presentation to Mr. Sanderson of an illuminated testimonial, bearing the following inscription: "Presented to Mr. E. Sanderson by the members of the National Chrysanthemum Society, in recognition of his valuable services as the President for many years, and for his unwearied efforts on behalf of the Society since its formation. They desire also to place on record their admiration of his skill as a grower and exhibitor of the incured varieties of the Chrysanthemum, which has placed him in the front rank of successful amateurs. That he may long be spared to aid the Society with his advice and experience, and that his future life may be very happy, are the earnest desire of every member."

Mr. Ballantine in making the presentation and Mr. Holmes in supporting it made a few kindly remarks respecting their appreciation of Mr. Sanderson's services, and the recipient responded appropriately, stating that they could not have accorded him any recognition that would have been more agreeable or acceptable. It was just such a form as he should have suggested had he been consulted in the matter. So carefully, however, had the scheme been concealed that until a few minutes before the dinner he had not the slightest idea that anything

a deep edging being composed of that plant, and the arched wire trellis corresponding to the handle being covered with the same. This deep edging serves not only to support the plants, but also to conceal a good portion of the stems which, when this Phlox is grown strongly, is rather too conspicuous, the consequence often being that they fall about, presenting a weedy, dragged appearance that is far from satisfactory. The flowers were large, the colours rich and varied, and the beds altogether were very charming. The flower garden near the house is also one of the most effective, though simple in design, of any in the Pelargonium style of bedding that we have seen this year, and it proves that when carried out in a tasteful manner and varied as much as possible there is much to recommend it wherever bright colours are required. The great point is to avoid a elashing of brilliant tints, and this has been carefully studied at Knebworth, for while sufficient scarlet Zonals have been employed to give the necessary brightness, white flowered varieties, Verbenas, and other plants are used as foils in intermediate beds. Verbena venosa is well grown and telling, as also is Verbena Blue Bonnet, and several beds of Tuberos Begonias show conclusively what can be done with these plants when good varieties are selected. Ivy-leaved Pelargoniums are also placed out in small beds with satisfactory results, Madame Thibaut being especially noteworthy.

Some distance beyond the flower garden is the wild garden, an extensive tract that abounds in beds of plants allowed to ramble un-

checked, mounds of Blackberries and Honeysuckle, beds of Rosa rugosa, and rustic bridges being the chief features; but this appears to be at present in an unfinished state, though it will ultimately be very picturesque. A delightful Fern dell, and a tree-embowered pond surrounded by marsh and water-loving plants (the Water Soldier, Statice being very conspicuous), were successively visited and admired. The collection of Chrysanthemums which Mr. Kipling grows well for late flowering was scrutinised with interest. The vineries and Peach houses also received some attention, for all alike show the skill of an experienced cultivator. A short time was spent at the lake in the lower portion of the park, and then a small contingent departed homewards, leaving the rest to conclude the day with a tea and a journey to town by a later train.—JOURNALITE.

FLORAL DECORATIONS IN NEW YORK.

THE American gardening papers frequently give elaborate descriptions of the expensive floral decorations undertaken in connection with balls and parties in the United States cities, and the following in a recent number of *The American Florist* is an example of what is accomplished. It is a description of the decorations at a ball given by Mr. Cornelius Vanderbilt of New York in the spring.

"Through my connections in this city I had no difficulty to gain entrance to the mansion and take a stroll through the gorgeous apartments. The floral decorations were finished, the florists had left the premises, and the tables were set for 200. The entry has carved oaken walls and ceiling; opposite the door is a broad, beautiful stairway of about eight or ten steps; to the right and left of this hang the life-size oil paintings of Commodore V. and W. H. V.; a half looped up oriental portiere of a creamy white tint hangs across the head of the stairs, and divides this apartment from the hall beyond; to the right of the foot of the stairs is an open door leading to the entry room for the billiard and card rooms below; two large antique bronze vases form the caps of the balusters and from two black antique lamp posts falls a mild light over the surroundings.

"This entry or stair hall was decorated as follows:—The vases, about 2 feet in diameter, were filled with yellow Tulips and yellow Narcissus arranged in a loose, natural way, in a manner that about a dozen of each variety were in a group or cluster; as foliage, sprigs of English Ivy stuck in a careless, irregular manner, and native Fern leaves were used; the background for this display of 'yellow' was formed by a solid bed of Orchids on the plants, the flowers hanging to the right and left of the balustrade; at both sides of the head of the stairs, touching the paintings above mentioned, stood two handsome specimens of Cocos Palms. Standing at the foot of this stairs and turning a little to the right, you caught a glimpse of the entry room. The walls and ceiling of this are polished ebony, decorated slightly with gold and mother-of-pearl; the mantel, also black and gold, is opposite the door; on this stood two small vases, each containing about one dozen American Beauty Roses—and 'beauties' they were, averaging 4½ inches in diameter; these two were just carelessly stuck in, care being taken to have the stems of different height to make them appear natural. The effect produced by these few flowers with their foliage on the polished black background was simply immense. From the stairway they appeared like two pictures of Roses painted on the wall. Only this and nothing else constituted the floral decoration of this magnificent little room.

"Entering over the stairs into the main hall we saw before us another stairway leading to the upper floors of the house. This stairway has but one baluster, as it runs alongside of the wall, but at a height of about 6 feet it makes a turn to the right, displaying its balustrade. Along the entire length of this railing, as far as it was in view, white Azaleas in pots were placed, forming the upper border; then followed white Lilac mixed with Vinea vines; these were in turn followed by various varieties of Orchids hanging irregularly out of what appeared like a rockwork, and which was formed down to the floor with Virginia Laurel boughs. On top of the baluster set a bunch of 100 Magna Charta Roses, while in the corners formed by the stairway stood large specimens of Cocos and Areca Palms. Immediately to the right there is a large fireplace; the mantelshef of it is about 10 feet from the floor, supported by two large carved oaken figures. In this fireplace were two rustic logs, apparently burning, the flames being imitated with scarlet Tulips, and red hot ashes were figured with scarlet Geraniums; to the right and left of these burning logs, but without covering or hiding any part of the carved figures, stood two fine specimens of Yews in pots, while in the background bunches of single white Primroses with their foliage and Vinea vines reminded one of the rough coating of an old-time fireplace back; bunches of flowers hung up inside the fireplace in imitation of some useful articles our forefathers used to appreciate, I suppose, made the 'fireplace of the old homestead' complete. The mantelshef was covered with Orchids, their flowers hanging over the sides in all directions.

"Close to this fireplace about 8 feet from the floor is a little window. The decoration of this insignificant little space was in keeping with the old homestead and a perfect little gem of floral decoration. So simple and yet so effective! A Dracena indivisa, a white Azalea smaller in size than the Dracena, and one conspicuous Orchid were all the plants used for it. The bulk of the decoration rested in the right hand corner; the pots were hidden by green foliage, part of which, together with the flowers of the Orchid hung in a careless natural manner down the wall.

"In the drawing-room where the dancing was to go on only a few

specimens of Palms were used in safe corners. The musicians were on the same floor, but hidden behind a balustrade 6 feet high made of Laurel boughs, which again was crested with a compact row of Orchids, over this balustrade rose the crowns of three handsome Cocos Palms, and the four spaces thus formed were spanned over by Orchids fastened against heavy wire arches. Last, but not least, I must mention a little fireplace in this same drawing-room close by the gorgeous display of Orchids; this was modestly decorated with dark green foliage, native Fern leaves, &c., and from the midst of all these, as if by accident, peeped a modest plant of Marguerite Daisy. I found it strange that not a sprig of Smilax was used in this decoration, and learned since that many people 'of society' have a dislike for it, and it is therefore banished from many houses.

"The decorations of the dining tables consisted of loose bunches of flowers and Ferns, and among the bunches carried by ladies I noticed some containing white Violets as one half and Lily of the Valley as the other, or Ulrich Brunner Roses for one and Heliotrope for the second half; others had Lily of the Valley for one and Orchids for the other. I am told that such bunches range in price from 10 dollars to 35 dollars each.

"Considering the size of the apartments there were not many plants and flowers used in this decoration, but the manner in which they were displayed brought every one to count, and the effect was impressive. Quality took the place of quantity, and if the New York aristocracy makes the style for America, the American florists are to be congratulated that the old custom once more comes to reign."



TERRA COTTA ROSE.

I HAVE no recollection of making any mention of this Rose, or of ever having heard of it before, and think there must be some mistake. Four small blooms now sent me do not seem to differ practically from Anna Ollivier; rather yellower in ground colour, perhaps, but that is probably the result of fading. There does not seem to me any likelihood of its forming a distinct sport. I have now many blooms on my plants of Anna Ollivier with little or no shading, and others fully coloured with the "terra cotta" tint, which has always been quite distinctive of the variety. Many of the Tea Roses are very changeable in colour, and it requires a very decided variation indeed, as from Souvenir d'un Ami to Souvenir A. Prince, or Catherine Mermet to The Bride, to give any hope of a fixed and distinct sport which can rightly be called a new Rose.—W. R. RAILLEM.

PACKING ROSES FOR PARCEL POST.

HAVING always been congratulated on the freshness of my Rose blooms sent to friends at long distances, perhaps a hint or two may be of some use to amateurs. The following is an extract from friends in Luton, about 100 miles from here. "We duly received your Roses yesterday morning. They were indeed beautiful, and opened out splendidly, looking as fresh as if only just cut. They were very delightful, and gave us much pleasure."

These Roses (as usual) were cut in the early morning with the dew upon them. A milkpan was about three parts filled with grass pressed firmly down all round. The pan was then half filled with cold spring water. The grass being raised from the side of the pan, Roses were inserted all round the edge, those with the longest stems being used, and the shortest were stuck upright in the middle until the pan was filled. They were placed in a cool cellar until evening. A box sufficiently large for about three dozen blooms and buds intermixed being procured, this had about 2 inches of short fresh cut grass placed in the bottom, which affords a soft damp, but not wet bed. On this the blooms were laid and placed with the stems towards the middle of the box from either end until only a few inches of space remained. Here a good thickness of the short grass is placed firmly well above the sides of the box, so that when the lid is shut it requires pressing to close, which holds all firm, so that no shaking and rubbing occurs. Before nailing or tying down, a layer of tender Lettuce leaves gently presses on the blooms. Being despatched in the evening they avoid the drying effects of the sun in transit, hence that freshness and bright colour which is so highly prized.—J. HAM.

[Of flowers sent to us to be named few arrive fresher than those packed in soft newly cut grass.]

NATIONAL ROSESHOWS. SHEFFIELD.

IF a warm and liberal support to the Show and to the prize list is required by the National Rose Society in choosing the place for their provincial Exhibition, those authorities must have been amply satisfied that they accepted the invitation of Sheffield for 1889. Two ten-guinea cups, and large contributions to the local prizes, and other rewards offered by the National Rose Society, formed a tempting programme indeed, and it was a great pity that the earliness of the season

and the showery character of July caused so many gaps to be seen on the tables. The conservatory was well fitted up, and formed an admirable situation in the Botanical Gardens, where it was difficult to imagine one was really in the town of Sheffield. The large attendance of visitors in the afternoon must have been gratified to find Yorkshire well to the fore among nurserymen, though the big county seems to want an amateur able and willing to exhibit in the first flight. It was hardly to be expected that the Jubilee Trophy would be wrested from Messrs. Harkness, and, among amateurs, Rev. J. H. Pemberton and Mr. W. J. Grant seem to have brought back the old days of Messrs. Jowitt and Baker, when there were only two "in it," and the rest of us stood by and wondered. At Sheffield the rivals seemed to have tacitly agreed to a division of the spoils, Mr. Pemberton taking the Jubilee Trophy, and Mr. Grant the handsome cup offered by the Mayor of Sheffield for twenty-four. I do not myself think that any exception can be taken to Mr. Grant's entering and showing in division D, which seems below his calibre. He naturally went for the biggest prize, which one would have expected to find offered for thirty-six in division C. Those who have much the best Roses will surely win much the best prizes; and, if we cannot win ourselves, we can admire the Roses of those who do.

Sheffield is certainly centrally situate, and should be fairly easy of access to all parts; and if I again intrude my personal adventures on the readers of the Journal it is with the hope that I may "point a moral" as well as "adorn my tale." Lincoln was my sleeping-place, where my worthy landlady, hearing that I had fetched my show Roses from the cloak room for fear of the gas, and was seeking a night lodging for them, kindly provided a small basin filled with fresh water, and was somewhat dismayed when she saw my boxes. In the morning an unexpected change at Retford caught me napping. I saw all safe into the van of the fresh train, but omitted to interview the guard! Alas! how soon had I forgotten the lesson of Darlington last year, when my best twenty-four performed part of the journey literally standing on its head. Arrived at Sheffield, I flew to the van. Too late! A porter was there before me, and I caught him in the very act of rolling my two six-boxes over and over, as if they were barrels or cheeses, in order to get them out. I must have been very gentle with him outwardly, for he hung about the horse-van as we were starting in evident expectation of a tip. He cannot have known how little disposed I was to prevent his hanging in any sense. Arrived at the place of exhibition, one box of six, though much injured, was exhibited and gained a prize. The other box contained when I started:—One soup-plate, Her Majesty, over-blown; one cheese-plate, Mrs. J. Laing, ditto; three thimbles, Princess Beatrice, Comtesse Frigneuse, and Ethel Brownlow, too small to be called buttonholes; and one indifferent Rose, The Bride. These productions of Nature I had purposed to exhibit if I could muster sufficient cheek, and the tables were fairly crowded so that they would not be much noticed, as the consummation of my entry in Class 14 for "six new Roses." But there was nobody against me, and a good-sized table with "Class 14" on it held my little box, while it was yet elosed, in a commanding but desolate position in its very centre. One of my earliest mentors in the Rose-showing world held (and holds I believe) the letting good money go begging by failing to show in any class in which you possibly can, to be simply unpardonable. Yet when I opened that little lonely box in that prominent position, and saw nothing whatever but tubes upside down and some of the petals of one Rose visible under a heap of wet dirty moss. I am not sure now whether I ought not to have been grateful to that porter after all for so potently solving the question of whether the box was to be shown at all. Class 14 contained no exhibits, and my little moral is—not only to make friends with every fresh guard at whatever cost, but also, to exhibitors in a small way, to remember that six-boxes are especially liable to be upset (though not often rolled, I hope), and can really travel without much inconvenience with the owner himself.

Messrs. Harkness's trophy stand of thirty-six was really very fine and well ahead, Horace Vernet, The Bride, Sir R. Hill, Dupuy Jamain, Duchesse de Morny, Niphetos, and A. K. Williams being quite first-class. Messrs. Mack, however, showed strongly, having a most lovely Maréchal Niel in a prominent position, "dressed," it is true, but very telling. They had also Susan, Duchesse de Morny, and Dupuy Jamain in very good form. One naturally came to Messrs. Dickson's stand with interest, hoping to see some of their new Roses. It was a great disappointment to find they had brought none, and no consolation to read in the Journal that their novelties were exhibited at Wirral and Manchester, though not at the National Show. It was rather sad to see only two seventy-twos, and the name of Cant entirely absent from a National Show. But Messrs. Harkness's first prize stand seemed to show that the end was nearly at hand even with them; and Mr. G. Paul's blooms, though creditable for the season, were small, and had a tail. Messrs. Jefferies and Merryweather showed well in division B.

In the amateur classes the trophy again naturally attracted the best blooms, Rev. J. H. Pemberton's winning twenty-four being quite in his best style. In form and colour his Victor Hugo, which won the medal as best H.P. in the amateur classes, was a bloom to remember, and he had also Comte Raimbaud (very large and fine), with Horace Vernet, Duke of Edinburgh, and A. K. Williams, quite first-rate. The same gentleman was the only competitor in division C, but there was nothing

to be ashamed of in his thirty-six; he must have made a wonderful record at all the late shows. Mr. Grant had not much difficulty in winning the cup for twenty four, but he seemed to be past his best, and a had bloom of Madame J. Desbois in the centre rather spoilt the appearance of his stand. Mr. Prince was well to the front in nurserymen's Teas, but the weather had been sadly against them, and all had suffered from the wrath of St. Swithen. Rev. F. Burnside was fortunate in obtaining such a handsome prize for his twelve, for they could not be called first-class, though Jean Ducher was fine. They were, however, decidedly better than any other amateur could show, and that is the main thing. In Mr. Grant's third prize box there was a truss of Adam (more often shown as President) exhibited unthinned, and consequently with two or three younger Adams affectionately, but perhaps rather obtrusively, surrounding their parent. Someone as I passed by was endeavouring to point out an allegorical meaning in these descendants of our common ancestor, but I incline to the supposition that the exhibitor had no such intention.

It was noteworthy, in class 21, "twelve single trusses of any yellow Rose," to find Francisca Kruger first and Maréchal Niel second. I seem to remember having read in the Journal two or three years ago some depreciatory remarks on Francisca Kruger as being, though the best of M. Nabonnand's raising, not a Rose of much merit; and I fancy this may have been true, and that the fact is it has very much improved lately, as I believe Roses sometimes do. Sometimes green-eyed or malformed, it is often, when half open, a most lovely flower. In the next class, twelve of any white Rose, Mr. Prince's new sport was beaten by a box of Niphetos, exhibited by Miss Mellish, of surpassing purity and cleanness. I was not surprised to hear that all these blooms had been cut from one plant. Such a spotless stand in such showery weather could only have come from under glass. A wide range was offered in class 25, twelve Roses, six of any H.P. and six of any Tea; and it seemed therefore somewhat surprising that the first and second prize stands exhibited exactly the same varieties—Alfred Colomb and The Bride. The explanation is that each of these is a late and yet a first class Rose, and they certainly seemed to show very well together. On the whole, the N.R.S. and the Botanical Society of Sheffield may be congratulated upon as good a Show as could be expected considering the circumstances of the season.—W. R. RAILLEM.

REVIEW OF BOOK.

A Handbook of Cryptogamic Botany. By ALFRED W. BENNETT, M.A., B.Sc., F.L.S., AND GEORGE MURRAY, F.L.S. London: Longmans, Green & Co., 1889.

To the more advanced botanical student no division of the vegetable kingdom presents so much interest and is so encouraging to original investigation as that devoted to Cryptogamic plants. Flowering plants have been under close observation for such a length of time, and the facts connected with their life history have been so freely and fully recorded in popular text books, that they have been within the reach of all. Differences of opinion have existed amongst the authorities, it is true, respecting the more intricate structural or functional peculiarities, and with regard to the classificatory value of certain organs in particular groups of plants. Generally speaking, however, there has been little of an important character in recent years to add to the knowledge of flowering plants as affecting the principles of their structure and reproduction. Investigations regarding the evolutions of plants, or the gradual transition of variation effected by cross-fertilisation through insect aid, have been the most numerous and the most prolific of interesting results, while the microscopic observation of embryonic development has extended our knowledge on the relationship of plants and the origin of singular forms of structure.

In the case of the Cryptogamic, or so-called flowerless plants, progress of a very different kind has been made within the past twenty or thirty years, chiefly because much less was known respecting them, and because there has been a great concentration of attention upon them. Considerable improvements have been effected in the means of microscopic research, and this has been an enormous assistance, as the reproductive organs in the Cryptogamia are in all cases minute, and in all the lower forms exceedingly so, necessitating the highest powers and the greatest care in observation. No doubt the use of imperfect instruments by the earlier investigators led to the record of so many erroneous statements that have puzzled and misled subsequent observers. There has long been a kind of mystery attached to the lower forms of vegetation included in the Cryptogamia, and the researches of recent botanists have not entirely dispelled this, but they have thrown a much clearer light upon the phenomena connected with the growth and reproduction, and within recent years well authenticated facts bearing on these matters have increased at a rapid rate. Unfortunately they have been widely scattered through special treatises, monographs, or papers published on the Continent and in the proceedings of scientific societies, so that they were practically inaccessible to the ordinary student. The work on Cryptogamic botany by the Rev. M. J. Berkeley, whose death we have so recently had to deplore, was the first reliable attempt to convey a general but scientifically accurate knowledge of these plants, and since its appearance in 1857 it has constituted a standard work on the subject. Necessarily, however, since then the advance has been very great, and something bringing the information up to date and containing all that is available has become requisite.

This task has been undertaken by Messrs. Bennett and Murray, and in the work now before us, the title of which is given above, we have the results of their labours.

We have no hesitation in saying that this is an extremely valuable contribution to the literature of Cryptogamic botany, and it will become a text book for students as well as a useful compendium of existing knowledge for botanists generally. It does not claim to be a popular or indeed an original work, but is a scientific exposition of Cryptogamic structure, and a condensation of information obtained from a great variety of sources. But in it is incorporated much of the original work of the authors, Mr. Bennett having undertaken the Vascular Cryptogams, the Muscineæ, the Algæ, and the Schizophyceæ; Mr. Murray having dealt with the Fungi, Mycetozoa, and Schizomycetes. The authors invite original investigators to send them respectively as the divisions named, though each holds himself responsible for the whole of the volume.

The book comprises 473 closely printed pages and contains 378 excellent illustrations from different sources, but including many that are original. All have been selected with great care, are duly acknowledged, and assist considerably in elucidating the descriptions in the letterpress. One important matter deserves special notice—namely, the attempt to simplify the nomenclature by anglicising the terms employed in designating the respective organs. In the place of Sporangium, Archegonium, Antherium, &c., we now have "sporangium," "archegonium," "antheridium," "cænobe," "sclerote," "epiderm," &c. The use of the term "spore" is also restricted to "any cell produced by ordinary processes of vegetation, and not directly by a union of sexual elements, which becomes detached for the purpose of direct vegetative propagation." The word is, however, compounded with other terms to denote special characters in certain classes, as "chlamydospores" in the Protophyta, sporangiospores in the Myxomycetes, &c. In some of the vascular Cryptogams, as, for instance, in the Selaginellas, two forms of spores are produced, one series having hitherto been termed macrospores by many writers, and the other microspores. Messrs. Bennett and Murray now discard the former term in favour of megaspore, as in all respects preferable, and that is adopted throughout the volume. Antherozoid is also employed instead of spermatozoid for the fertilising agents furnished with vibratile cilia and moving by their aid, pollinoid being applied to motionless antherozoids destitute of cilia. In several other respects alterations and improvements have been effected in the existing systems of nomenclature.

The work is in seven sub-divisions, dealing respectively with vascular Cryptogams, Muscineæ, Characeæ, Algæ, Fungi, Mycetozoa, and Protophyta, the descending order having been adopted in preference to the ascending as more in accordance with the method of arrangement in such works adopted by the best authorities, and on the principle of proceeding from the known to the unknown. Under each sub-division are groups, classes, and orders, but except in the lowest classes the distinguishing characters of genera are not dealt with except as illustrating the peculiarities of the order or class. After each section a list is given of the books consulted, and each of the larger divisions is accompanied by a review of the fossil members of the families, some seventeen pages being apportioned to the fossil vascular Cryptogams.

As an example of the style adopted, and also as conveying the most recent information upon a subject that is still very imperfectly understood amongst practical horticulturists, we give the following extract upon the fertilisation of Ferns, the three illustrations having been kindly lent by Messrs. Longmans to accompany the description:—

"The germinating spore develops into the prothallium by the bursting of the cuticularised exospore, and the rapid growth and division of the contents of the endospore into a plate of cells. Before germination the contents of the spore become invested with a new cellulose membrane. But the tabular prothallium does not always result directly from the contents of the spore. In the Hymenophyllaceæ the spore undergoes division, even before the rupture of the exospore, into three cells, one of which only attains great development, dividing by transverse septa, and branching until it greatly resembles the protoneme of a Moss; the flat prothallia then springing from lateral shoots. In most of the Polypodiaceæ, which include by far the greater number of the genera of Ferns, and in the Schizæaceæ, the contents of the spore develop directly into a short segmented filiform protonemal structure, which expands at the apex into a cordate or reniform plate of tissue, consisting at first of only a single layer of cells. If a single apical cell is present, it soon disappears, and is replaced by a growing point situated in a depression at the anterior end of the prothallium, behind which a cushion, several layers in thickness, is formed by tangential cell divisions. The prothallium is most commonly monœcious, though the sexual organs may not appear at the same time, and is strictly bilateral or dorsiventral, the result, according to Leitgeb (Sitzber. Akad. Wiss. Wien, lxxx., 1880, page 201), of the action of light. The archegones are found exclusively (except in Marattiaceæ) on the under side of the cushion. Rhizoids are produced in large numbers on the under side of another part of the cushion; the antherids also on the under side among the rhizoids, or less often on the margin. In *Gymnogramme leptophylla* (Desv.) the prothallium is many lobed, and the archegones and antherids are produced on separate conical tubercle-like outgrowths from its under side, which penetrate into the soil, where they are perennial, and may give birth by budding to new prothallia, while the sporophyte generation is annual. The prothallium is occasionally, in the Hymenophyllaceæ, reduced to a single row of cells terminating in an antherid, or even to a single cell. Campbell has

detected continuity of protoplasm in the cells of the prothallium of *Struthiopteris germanica* (L.). In the Osmundaceæ the prothallium springs directly from the spore without any intermediate protoneme, a plate of cells being formed on germination by longitudinal and transverse divisions; the first rhizoid is formed out of a posterior cell. The ribbon-shaped prothallium of *Osmunda* (L.) is characterised by the presence of a midrib composed of several layers of cells running along its whole length. The archegones are produced on the under surface on this midrib; the antherids either on the margin or on the under surface with the exception of the midrib. An approach towards a higher type of organisation is indicated by the tendency of the prothallium to become dioecious in the Osmundaceæ, and in *Struthiopteris* (L.). All the spores from the same sporangium sometimes produce male prothallia—i.e., such as bear antherids only, the archegones being produced later, and in smaller numbers, on female prothallia; or the same prothallium may produce first antherids and subsequently archegones, when it may be termed proterandrous. This is remarkably the case also in *Gymnogramme*. In *Cystopteris fragilis* (Bernh.) (Polypodiaceæ) Campbell states that there are two kinds of prothallium, a smaller male

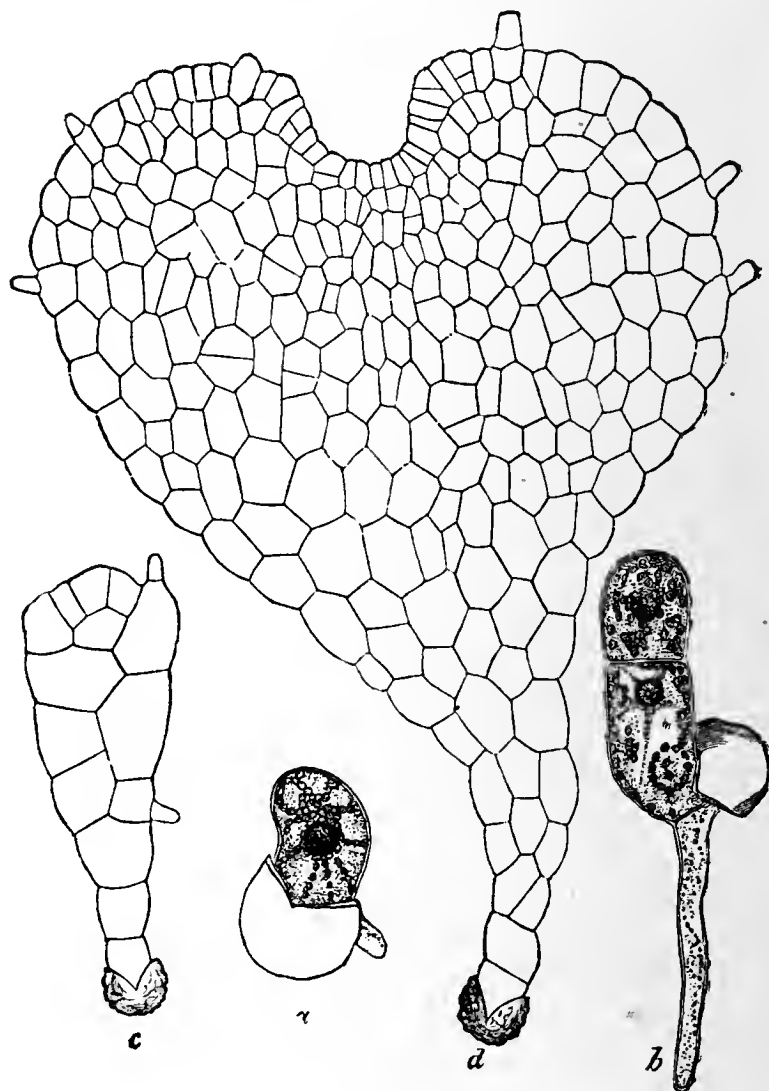


FIG. 19.

Germination of prothallium of Fern, with exospore still attached. *a, b*, *Dicksonia antarctica*, Lab. ($\times 240$); *c, d*, *Aspidium Filix-mas*, Sw. ($\times 150$). (After Luerksen.)

and a larger hermaphrodite. The prothallium of Ferns is sometimes propagated vegetatively by the production of adventitious shoots from single marginal cells, which become detached and form independent prothallia. This takes place especially in Hymenophyllaceæ and in *Osmunda*, but occurs also in Polypodiaceæ, abundantly in *Gymnogramme* (see Cramer, Denkschr. Schweiz. Naturf. Gesell., 1880). The prothallium of *Vittaria* (Sm.) produces peculiar stalked bulbils.

"The antherids of Ferns are small papilliform projections on the under side or margin of the prothallium (very rarely on the upper side), produced amongst the rhizoids, and of similar origin—i.e., from a single superficial cell; in the Hymenophyllaceæ they are produced also on the protonemal filaments. The protuberance becomes separated by a septum from the parent superficial cell, and then sometimes divides at once into the parent-cells of the antherozoids. But more often the papilla divides first of all into a central cell surrounded by a single layer of peripheral cells. These last are barren, but contain chlorophyll; while the central cell divides still further, each derivative nearly cubical cell then producing a flat spirally coiled antherozoid contained within a vesicle, or 'special parent-cell.' In no case is the number of antherozoids produced by a single antherid very considerable. The function of the peripheral cells appears to be to absorb water violently when the antherid is mature, in consequence of which they swell up considerably

and rupture the central cells, thus causing the escape of the parent-cells of the antherozoids. From each of these is then discharged, by the bursting of its delicate cell-wall, an antherozoid consisting of a flat band of protoplasm coiled spirally three or four times, and bearing at its anterior end a number of fine cilia (fig. 20). To its posterior end is

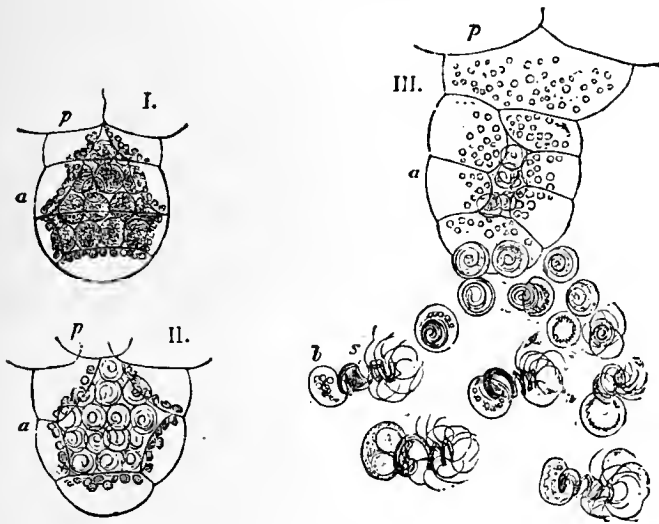


FIG. 20.

Antherid of *Adiantum Capillus-Veneris*, L. in different stages. *p*, prothallium; *a*, antherid; *s*, antherozoids; *b*, vesicle with starch grains ($\times 50$).

frequently attached for a time a vesicle containing starch grains, which is probably the remains of the special parent-cell of the antherozoid. As in other vascular Cryptogams, the body of the antherozoid appears to be formed from the nucleus of the mother-cell, the cilia from the cell-protoplasm.

"The archegones are produced on the under side of the cushion of the prothallium, but in much smaller numbers than the antherids. Like them, each archegone is derived from a single superficial cell, which at first bulges only slightly, and is first divided into three cells by two tangential walls. The lowermost of these three, or basal cell, divides further, and takes its share in the formation of the venter, or swollen part of the archegone, which is altogether imbedded in the prothallium. The outermost of the three cells develops into the neck wall, or outermost wall of the neck of the archegone, dividing at first into four cells, from which the four rows of cells which constitute the neck are formed by oblique septa. Since the neck grows more rapidly on the anterior side—i.e., the side nearest to the apex of the prothallium, and hence become convex on that side, the number of cells is also larger in the anterior rows of the neck, the usual number being six, while there are seldom more than four in the concave posterior side. From the middle one of the primary cells arises the whole of the axial row of cells of the archegone, consisting of the central cell and the canal cells. During

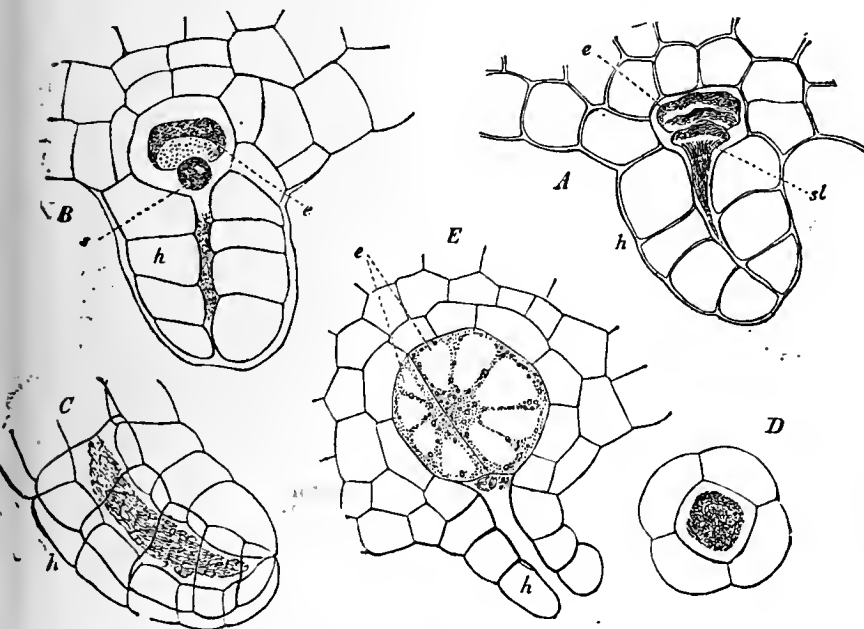


FIG. 21.

Archegone of *Adiantum Capillus-Veneris*, L. in various stages. *A B C E*, in longitudinal section; *D* in transverse section: *h*, neck; *sl*, canal-cells converted into mucilage; *s*, ventral canal-cell; *e*, oosphere; in *E* divided into a two-celled embryo ($\times 800$). (After Goebel.)

the development of the neck this middle cell becomes pointed upwards, and forces itself between the neck cells; this pointed portion becomes divided off by a septum, and now forms the single neck canal cell, which lengthens as the neck lengthens. The large central cell now breaks up into an upper and smaller ventral canal cell and a much larger

lower cell, the protoplasmic contents of which subsequently become rounded off, and constitute the oosphere. According to Campbell, the ventral canal cell is wanting in *Struthiopteris germanica* (L.). The walls of the canal cells swell up and become converted into mucilage, and finally this thin mucilage, together with the protoplasm of the canal cells, is expelled from the open neck. The antherozoids are retained by the mucilage, and collect in large numbers before the archegone; a number of them force themselves into the canal of the neck, and of these some eventually reach the oosphere, and coalesce with it, entering it at a light coloured spot near the neck, which is termed the receptive spot. After impregnation the neck closes up. It is very rare for more than one archegone to be fertilised on the same prothallium, and the enormous majority of prothallia perish without producing any sporophytic generation."

The book is neatly and substantially bound, well printed on good paper, and creditable alike to authors and publisher.

HORTICULTURAL SHOWS. ROMSEY.

THE annual Exhibition of the above Society took place in Broadlands Park on Monday, August 5th, and was in every way a great success. Many readers will remember that Shows were held by the same Society in the years 1880 and 1881, but through wet days and other causes were allowed to die out. The Society has now made another successful start, and it is hoped will go on for many years. The Society is fortunate in having for its President the owner of Broadlands; the Hon. Evelyn Ashley, who places at the disposal of the Committee the beautiful park and pleasure grounds. The Society has also an excellent Secretary in Mr. B. Chignell, who tries his utmost to make the Show a success.

The principal prize in the schedule—that for twelve stove and greenhouse plants, distinct, six to be in bloom—was easily carried off by Mr. Budd, gardener to F. G. Dalgetty, Esq., Lockerby Hall, Romsey, who had a very fine collection of plants, comprising large *Stephanotis floribunda*, *Allamanda Hendersoni*, *A. grandiflora*, *Ixora Williamsi*, *Bougainvillea glabra*, a very fine *Croton Queen Victoria*, *C. paradoxa*, *Gleichenia Mendellii*, *Areca Verschaffeltii*, and a good plant of *Alocasia Lowii*. In the class for six stove and greenhouse plants, distinct, the same exhibitor was again first, having capital plants of *Cycas revoluta*, *Dasylirois corymbosa*, *D. longifolia*, *Croton angustifolius*, and *Cassia corymbosa*. There were five groups put up for the prizes offered, foremost among which was Mr. Budd, who showed a very tastefully arranged group, having for the back plants of *Cocos Weddelliana*, a groundwork of *Maidenhair Fern*, interspersed with well-coloured small *Crotons*, *Tuberose*, *Francoa ramosa*, *Cattleya Eldorado*, *C. crispa*, &c. Mr. Osman, gardener to Mrs. Strong, had a good group for the second prize. Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was third. Mr. Evans, gardener to Lady Ashburton, Melchet Court, was the most successful with *Colcus*, Mrs. Strong and Mr. R. West taking the remaining prizes. Mr. R. West had the best *Gloxinias* and *Achimenes*, showing well in each class.

Fruit.—There were three collections of six dishes put up, all of which were good, there being a very close run for second and third places. Mr. Budd had very good samples, which won for him the first prize. They were a handsome *Queen Pine*, beautiful colour, good *Muscat of Alexandria* and *Black Hamburgh Grapes*, *Brown Turkey Figs*, *Violet Hâtive Nectarine*, and *Peaches*. Mr. Fowler, gardener to the Hon. Evelyn Ashley, Broadlands, also staged a first class collection, including *Muscat of Alexandria* and *Black Hamburgh Grapes*, fine *Dr. Hogg Peaches*, and good *Moor Park Apricots*. Mr. Evans was third. Mr. Fowler was the most successful with *black Grapes*, having fairly well finished *Black Hamburghs*, Mr. Budd being second; and in the class for two bunches of white *Grapes*, Mr. Budd was first and Mr. Fowler second for *Muscat of Alexandria*. Mr. Fowler had the best dish of *Peaches*, very fine fruits of *Dr. Hogg*, as also he was first for *Nectarines* and first for *Apricots* for a very good dish of *Moor Park*. Mr. Budd showed the best six dishes of hardy fruits, having in his collection *Rivers' Prolific Plum*, *Early Alexander Peaches*, and *Moor Park Apricots*. Mr. West had the best stand of *Roses*, and also the best stand of twelve herbaceous cut flowers, the latter being very good.

Vegetables were well shown, Mr. Evans being the most successful, having very fine *Cauliflowers*. Mr. West showed the best six dishes of *Potatoes*. Mr. Evans had the best brace of *Cucumbers*, and Mr. Fowler the best dish of *Tomatoes*. The Judges were Mr. Cox and Mr. C. Warden.

STREATHAM.

A SHOW was held in the Streatham Town Hall on August 7th and 8th, and though the exhibits were not very numerous for such a good district, the quality was satisfactory in the leading classes. With keener competition the Exhibition might be greatly improved and extended. H. Tate, Esq., Park Hill, Streatham (gardener, Mr. W. Howe), was the most successful, securing first prizes for six foliage plants, six Ferns, six plants in flower, a group of plants, a collection of vegetables, and six dishes of fruit. The chief feature of the Show was formed by the groups in competition. Mr. Howe's premier contribution was very tasteful, bright, and well finished, tall *Palms* at the back, with *Campanula pyramidalis* (blue and white), *Lilium auratum*, and *Celosias* rising from a bed of *Ferns*, well coloured *Crotons*, *Fuchsias*, and

Acalyphas, with a margin of *Clerodendron fragrans*, *Caladium argyrites*, *Adiantum cuneatum*, and *Panicum variegatum*. Mrs. Gabriel, Norfolk House (gardener Mr. E. Cherry), was second, also with a good group, but the background was not quite satisfactory. Campanulas were freely employed with *Fraucoas* on a base of *Adiantums*, *Grevilleas*, *Zinnias*, and *Hydrangeas*. T. Gabriel, Esq., Elmstead (gardener, Mr. Guyatt), was third, his group containing well-grown plants, but the arrangement was a little heavy; *Vallotas* and *Primula obconica* had a good effect. Miss Lambert, Oak Hill (gardener, Mr. Sadler), was fourth, the group being chiefly composed of Campanulas. In the other classes for plants Mr. Howe was followed by Messrs. Fullbrook, Cherry, and Guyatt. Miscellaneous non-competing groups were contributed by Mr. J. W. Silver, Norbury; Messrs. J. Peck & Son, and Mr. Sadler.

HURSTPIERPOINT.

THIS Society held its third annual Exhibition in the Chinese Gardens on Wednesday, the 8th inst. The exhibits, over 500 in all, were arranged in one large tent under the able superintendence of Messrs. Richardson and Bunney, and when completed certainly presented as bright and cheerful a picture as anyone would expect to see. The exhibits as a whole, were without a doubt as much in advance of that of last year as the present season has all along been over that of 1888. This improvement was very noticeable in the miscellaneous groups of plants, which is one of the leading features of this Show, not only in the arrangement, but the plants were better, a result that might be gratifying, and local gentlemen who are fond of having their homes furnished with well grown plants would do well to encourage exhibiting in this class. The premier award was worthily given to Mr. M. Burchell, gardener to S. Hannington, Esq., Strood; Mr. A. Scutt, gardener to G. F. Jenkins, Esq., Burgess Hill, being a very fair second. In the class for six specimen plants, mostly foliage plants, Mr. A. Bish, gardener to Miss Fitzhugh, Street, was a good first. The same gentleman also had the best single specimen plant, a very fine *Adiantum farleyense*, and was first for *Gloxinias* with such plants as are rarely seen at a local show. The *Begonias* were fine and bright, those shown by Mr. G. F. Wickham, gardener to J. Humphrey, Esq., Keymer, being placed first; and Mr. Burchell's *Coleuses* were a remarkable fine colour, and good plants. Amongst cut flowers hardy herbaceous flowers were well represented. In two classes fourteen stands of twelve were staged, and W. Manton, gardener to Mrs. Clifford Borrer, Bolney, was the fortunate winner in both classes. The ladies' baskets of flowers were as attractive as they were last year, two of which were entered. Miss Bird was placed first with one of light graceful arrangement, in which Sweet Sultans and Maidenhair Fern were the chief features. Mrs. Sharwood was second, and Mrs. Ball third. There was also a good show of hand bouquets.

In fruit, Grapes were well represented by neat if not very large bunches. Mr. F. Godby, gardener to Dr. Wither Moore, Burgess Hill, was first in his usual good style, closely followed by Mr. J. Holman, gardener to A. H. Good, Esq., Burgess Hill. Mr. J. White, gardener to Mrs. Bacon, Keymer, showed some fine Peaches in the class for a dish of six, and also in the class for the dishes of fruit, and was first in each case. They were named Noblesse, but colour was so good as to make many who saw them doubt its identity. The same exhibitor was also first in both classes of Apples against numerous entries. Mr. W. Chandler, gardener to Rev. R. Holme, St. George's, was first for twelve Tomatoes, with splendid fruits of Sutton's Perfection. The competition in the vegetable classes was very close indeed. The trays were numerous and good. For the Society's prize, eight dishes, Mr. F. Godby was the winner. Mr. G. F. Wickham won Mrs. Mud's prize, and Mr. W. Manton was awarded Messrs. Sutton's prize. Over a hundred dishes of Potatoes were staged in the various classes, and were of high quality. Some of the sorts that came most to the front were Snowdrop, Schoolmaster, Vicar of Laleham, and Beauty of Hebron.

For the special prize list the local tradesmen came out in their usual liberal style, with shoulders and legs of mutton, garden tools, &c., for cottagers, not the least appropriate of which, perhaps, was "ducks for Green Peas." Messrs. Balchin & Son, of Hassocks and Brighton, made the only trade exhibit—a collection of well-grown decorative plants, &c., and G. B. Woodroof, Esq., Oaklands Park, had a large group of plants, not for competition, at the far end of the tent. The weather was all that could be desired, and a most enjoyable day was spent. Perhaps the hardest work fell on the shoulders of their worthy Secretary, Mr. T. G. Neil.

LEICESTER.

A CORRESPONDENT sends us a long newspaper cutting of this Show, from which we take the following extract:—

The exhibits were staged in five spacious marquees, the first being devoted to groups and stove and greenhouse plants, &c. There were only two groups entered for competition, and the Judges had no hesitation in awarding the first prize to Mr. S. A. Murray, gardener to Mr. S. Bennett of Knighton. The beauty of his collection was greatly enhanced by the facility and taste displayed in the arrangement, the colours being charmingly distributed, and there being a general air of lightness in the arrangement which had a really beautiful effect. From a base of greenery the flowers sprang up in the most natural way, and four large and handsome Palms towered over them in the centre, which gave a capital finish to the group, which comprised a number of rare tropical and greenhouse plants. Of the other group less can be said, the Judge's decision being generally endorsed. The individual specimen plants in this tent were not particularly striking, but the exotic Ferns were a splendid collection, and there was also an admirable display

of Fuchsias. In the marquee devoted to cut flowers the Roses and bouquets were prominent features amid collections which were throughout excellent. The principal exhibitors here were Messrs. Perkins (Coventry), Burch (Peterborough), Mack & Son (Catterick), Merryweather (Southwell), Harkness & Son (Bedale, Yorks), and Pemberton (Havering). Considering the lateness of the season the show of Roses was truly magnificent, and in several of the classes competition was exceedingly close. The Tea Roses, and the new Sir Rowland Hill particularly, pleased the connoisseurs, both for cleanness of growth and delicacy of colour. Messrs. Harkness & Son, Merryweather, and Mack and Son carried all before them in this department, while Messrs. Perkins' bouquets and wreaths, Mr. Taylor's table decorations, and Mr. J. Smith's sprays were triumphs of skilful arrangement. The herbaceous plants exhibited in this tent were also wonderfully good, the Zonal *Pelargoniums* attracting perhaps most attention. The Picotees and Carnations were also an admirable feature. In class 20, for twelve bunches, one competitor was disqualified, owing to sending too many varieties. Mr. Blair, gardener to the Duke of Sutherland, came first in this class, and Mr. Hickling of Loughborough was awarded second, but there was no doubt as to the relative merits of the different collections. Messrs. Thomson & Co., and Mr. Brown of Birmingham, were also very successful exhibitors of Picotees, which seemed to have been brought to the height of perfection. Considering that the season for Asters is yet early, the show of this bloom was also very commendable, and the cut flowers throughout were excellent. Mr. B. S. Williams of Holloway, London, sent a choice collection of plants, not for competition, and noticeable in the same marquee was a splendid display of valuable ware, comprising handsome designs in stands for table decoration, by Mr. J. Staynes of the Market Place and Gallowtree Gate.

The show of fruit was declared to be better than at any previous Show. As in other open departments the entries in some classes were not numerous, but any lack of quantity was amply made up by the extraordinary good quality. The gardeners to the Duke of Sutherland and the Duke of St. Albans were most successful in the open classes. The first prize for six distinct dishes was awarded to Mr. Edmonds, gardener to the Duke of St. Albans. His collection included some magnificent Black Madresfield Court Grapes, an English-raised fruit particularly well grown, which with White Muscats, Peaches, &c., were deservedly placed first. The Duke of Sutherland's gardener (Mr. Blair) came second. His collection included some very fine Hamburg Grapes and White Muscats, and the Nectarines here were also very noticeable. Of the other Grapes shown the best came from the same vineries, and were remarkable for their colour. English fruit was well represented by Gooseberries and Currants, the season having been favourable for ripening, as evidenced by the deep colour of most of the specimens. The Melons were also much admired, particularly those shown by Mr. Blair, for which first prize was awarded, and in this tent the splendid show of Tomatoes was favourably commented on. The plants shown by amateurs not employing a regular gardener also deserved a word of recognition, many of them being admirably grown.

In the next tent Dahlias, exhibited by Mr. Wright of Leicester, and Mr. Hickling of Loughborough, and a remarkably fine show of *Begonias* by Mr. B. R. Davis of Yeovil, immediately attracted attention; and the show of cut flowers in this department was throughout very creditable. In division F, open to amateurs, the Roses, though comparatively few in number, were of excellent quality, considering the somewhat advanced season. Picotees and hardy herbaceous plants were well represented. Four splendid baskets of cut flowers and six hand bouquets were exhibited, of the latter bridal bouquets being greatly admired. In division D, open to cottagers, window plants were hardly so well represented as might have been expected, but the specimens on view were certainly the best of their kind. Collections of flowers, vegetables, and fruits, not for competition, were contributed by Messrs. Hickling, Loughborough; H. Vann, Wigston; Mawbey, Humberstone (who were awarded an extra prize); J. Wright, Leicester; Pearson and Son, Nottingham; B. R. Davis, Yeovil; C. F. Clarke, Narborough; and Smout of Hastings, the latter of whom had on view a magnificent collection of seaweed and ocean flowers, arranged for the purpose of table decoration. In division H, for fruits, the eight classes—Strawberries, Raspberries, Currants, and Gooseberries—were well contested, and the quality of the produce was of uniform excellence, but not worthy of special note.

There was an admirable display of vegetables. In the open classes the collections were excellent, notably the one from Shropshire (Mr. J. Lambert's), which took the first prize, every specimen in this collection being in the "pink of condition." The Potatoes, Peas, Onions, and Cucumbers were likewise large in size and of excellent quality, so much so that in many instances the Judges experienced considerable difficulty in awarding the prizes. There was also a strong competition for the special prizes offered for vegetables by various local nurserymen and seed merchants.

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Illustrated Catalogue of Hyacinths and other Bulbous Roots.*

Messrs. Armitage Bros., High Street, Nottingham.—*Catalogue of Bulbs, Roots, and Plants.*

Messrs. Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Catalogue of Flower Roots.*

Harrison & Sons, Market Place, Leicester.—*Catalogue of Flowering Bulbs.*



HARDY FRUIT GARDEN.

EARLIEST PEARS.—Doyenné d'Été, or Summer Doyenné, being thinly cropped, is rather larger than usual. In favoured districts some of the fruit was fit to gather during the last week in July, and the trees would be cleared in about a week. This, when gathered and eaten directly it will part freely from the tree, is juicy and sweet, but if kept for a short time it becomes dry and mealy. Citron des Carmes, another small variety of unattractive appearance, has this season produced numerous large clusters of fruit, and unless these were well thinned out the quality will be very poor indeed. It is about ten days later than the Summer Doyenné, and ought also to be used when first gathered. Beurré Giffard is rather larger than the foregoing, and also superior in point of quality. This should be fit to be gathered and eaten by the middle of August, by which time the delicious Jargonelle will also be available in southern districts. The latter is carrying extra good crops, and in order to prolong the season (the variety will not keep a week after it is ripe) it is advisable to at once gather a few of the most forward fruit, wrapping these in tissue paper, and, after they are packed in a box of soft hay, placing this in gentle heat. It is in this manner the Jargonelle is often ripened for the shows early in August, and in any case a gain of a week or more will be effected. Birds soon discover when the Jargonelle is becoming soft and palatable, and unless netted over in anticipation of their attack a considerable number of the best fruits may be disfigured in a few hours.

THE EARLIEST DESSERT APPLES.—Early Red Margaret was fit for use during the third week in July, and fairly plentiful. Eaten soon after it is gathered, the quality is decidedly good. Early Harvest, which follows closely, has not proved a success this season, but it is a delicious little fruit eaten when first ripe. Mr. Gladstone is quite a failure, but, as a rule, it is a showy early variety, of small size, and good in quality. Beauty of Bath surpasses all the preceding as far as size is concerned, and is a handsome variety, of excellent quality if eaten soon after the fruit parts readily from the tree. It is a sure bearer, and ripens during the first or second week in August. Irish Peach, an old favourite, and somewhat later than the preceding, is very lightly cropped this season, and ripe fruit keep for a few days without being spoilt. Devonshire Quarrenden, another handsome well-known variety, is very scarce this summer. It is usually crisp, juicy, and sweet towards the end of August, and must not be kept long. Either of the three last named may be forwarded much as advised in the case of Jargonelle Pears, but it must be remembered the quality and appearance of the fruit is not improved by this artificial method of ripening.

EARLY KITCHEN APPLES.—The culinary varieties, unlike those fit for dessert only, will keep fairly well after they are ripe, and where the crops generally are thin; this unfortunately being the rule, it is advisable to use the Apples in great moderation while Gooseberries, Red Currants, Plums, and other more perishable fruit last. One of the first to be fit for cooking will be found in Carlisle Codlin, and this happens to be well cropped this season. The seedlings of this as well as Keswick Codlin and Lord Suffield cook beautifully when not more than three parts grown, and their removal will improve the size of those left on the trees. Duchess of Oldenburgh does not keep so well as the Codlins, and may well be used early, and where Stirling Castle, Hawthornden, and Red Hawthornden are well cropped, these also may be gathered from for early use, the first named being the best keeper of the three.

GRAPES.—These are quite a failure this season, but that is no excuse for neglecting the Vines. Last season the wood ripened badly, but this summer the growth is firmer in character, and if duly thinned out and stopped there is every prospect of its ripening satisfactorily. The budding and stopping ought really to have been attended to while yet it could have been done without the aid of a knife, but if this was neglected all superfluous growth should at once be cut out, and the best placed lateral growth reserved and shortened back to the fourth or fifth joint. Any with a bunch attached ought to be stopped at the second joint beyond this, and in all cases the sub-laterals or the side shoots pushed out from the stopped or pruned laterals should be pinched back to a single leaf or joint. Young rods are usually the most productive, especially if they have been laid in early, and stopped when from 4 feet to 6 feet in length.

FIGS.—Very vigorous trees have failed to fruit this season, but those rooting in hard poor ground, as well as any that have attained a great size without being of gross habit, are well furnished with fruit. Firm, short-jointed wood, in addition to being the most hardy, is also the most productive, and this cannot be found on much-crowded trees. In some instances the only way to secure abundance of fruit is to allow a moderate number of shoots to grow out from the walls, only the main branches being strongly secured. In any case the summer growth must be freely thinned out, light and air being absolutely essential for the proper ripening this, the fruit-bearing wood of next season. Summer stopping is sometimes resorted to, but this is a doubtful proceeding, the fruit, as a rule, being most plentifully produced near the points of well-ripened

unstopped shoots. Trees long established and heavily cropped are much benefited by a summer mulching of manure, and an occasional soaking of water or liquid manure in hot dry weather, the finest and most luscious being obtained from old trees thus liberally treated.

KEEPING RED CURRANTS.—Very heavy crops of fine fruit are now hanging on the bushes duly protected from birds, and those in structures permanently covered by wire netting are wonderfully productive. Should the weather keep dry the fruit will keep well, but in a showery muggy August it is liable to rot off wholesale. The only preventive measures are—first, the shortening to the fourth or fifth joint of all lateral growth not needed for enlarging the tree, and thinning the clusters of fruit according as it is required for use. This will admit much more air to the fruit and cause it to keep better.

WASPS AND FRUIT.—A considerable number of wasps are already at work among ripe fruit, and unless checked will soon do incalculable damage. As many nests as possible should be taken or destroyed; one of the most simple plans being to pour a little gas tar into the holes. Davis's wasp killer, used as advised by the maker, is singularly effective when placed where there is ripe fruit. It poisons many wasps and keeps away the rest. Bottles partially filled with beer, sugar, and water, and suspended among the fruit, attract large quantities of wasps and flies, few of which leave the bottles alive.

FRUIT FORCING.

FIGS.—Early Forced Trees in Pots.—Directly the second crop is gathered examine the trees, as keeping them somewhat drier at the roots with a drier condition of the atmosphere, consequent on a free circulation of air, tends to an increase of red spider and scale. These pests are almost inseparable from Fig culture in heated structures, so that the cultivator requires to be ever on the alert; still the enemies steal a march upon the grower, especially during the ripening of the fruit, therefore when that is cleared off the trees recourse must be had to cleansing, and as the foliage and wood is far advanced in ripening destructive agents may be employed at a strength which would not be safe at an earlier stage. If therefore those pests, and especially scale, have made undesirable progress it will be advisable to syringe the trees with a petroleum solution—a wineglassful to four gallons of water, in which 8 ozs. of soft soap and 1 oz. of soda has been dissolved, one person stirring the mixture briskly with a broom handle, whilst another applies it with a syringe to the trees, so as to thoroughly wet every part of the trees, the under as well as the upper part of the foliage, and all the wood. To prevent the mixture soaking into the soil a little dry moss may be tied around the stem, and then a sort of pyramid of the same placed around the stem. If the wood is badly infested employ a somewhat stiff brush for freeing it of the scale whilst wet. In bad cases repeat this in the course of a day or two, afterwards syringing thoroughly with tepid water. The trees will need very little further attention, only giving water to prevent the foliage becoming limp, ventilating to the fullest extent day and night; but protect the trees from heavy rains, which have a tendency to keep the trees active instead of inducing that rest so desirable for those subjected to early forcing. The old practice of placing early forced trees in pots outdoors is now little practised, the trees being continued under glass, complete rest being sought in dryness. If placed outdoors it must be in a sunny position, and the pots stood on a layer of ashes with similar material about them, and though they must not be allowed to suffer for want of water, material must be at hand to throw off heavy rains, in order to prevent the soil becoming sodden. Whether kept under glass or placed outdoors they cannot have too much light or air.

Early-forced Planted-out Trees.—The second crop is ripening, and will need a circulation of air constantly, more, of course, by day than at night. If dull weather prevail a gentle heat in the pipes makes all the difference between well-ripened and insipid fruit. Watering at the roots must be diminished and syringing discontinued, but a moderate air moisture may be allowed for the benefit of the foliage. If red spider is present and there is heat in the pipes coat them thinly with sulphur, or a good syringing may be given after the fruit has been closely gathered, choosing a time when there is a prospect of the moisture not remaining long upon the trees. As soon as the fruit is all gathered the trees may have a good washing with the syringe or engine to free the foliage of dust and red spider, otherwise a free circulation of air, dry and warm, should be maintained in the house until the foliage begins to fall naturally, and which must not be accelerated by allowing the soil to become dust-dry at the roots of the trees.

Unheated Houses.—To insure a crop of Figs with certainty and of the highest quality glass cases or structures with a south aspect are indispensable. The trees succeed capitally if the roots are restricted to narrow borders (one-third the width or height of the trellis is ample), well drained, and not more than 2 feet deep, composed of good loam of a calcareous nature, or adding a sixth of old mortar rubbish which contains what Figs require in lime and sand, or a fifth of chalk may be added and a sixth of road scrapings. If the loam be light add a fourth of clay chopped small and intermixed, which require to be placed together rather firmly to induce a sturdy short-jointed habit. With unobstructed light and provision for free ventilation Figs of the choicest description may be obtained if the usual attention is given in watering through a mulch of partially decayed rather lumpy manure, and feeding with liquid manure as required. It is also necessary that the growths be thin, acting upon the extension system, but securing by judicious stopping a fair amount of spurs. In no case allow more growth to be

made than can have full exposure to light. The fruit is now well advanced in swelling, ours are changing for ripening; therefore spare no pains to keep the foliage clean by syringing in the morning and early afternoon. Do not syringe, however, if the day is likely to be dull, or in the afternoon if there is no prospect of the foliage becoming dry before night. Under such circumstances damp the border, especially in the afternoon, with liquid manure. Admit a little air early, increasing it with the sun heat, maintaining it through the day at 80° to 85° with free ventilation, closing early so as to run the temperature up to 90° or 95°, and when the sun's power is declining a little air may be admitted at the top of the house so as to allow the pent-up moisture to escape, the temperature gradually cooling down. Water or liquid manure will be required once or twice a week, according to circumstances, in order to keep the soil thoroughly moist. When the fruit begins to ripen lessen the supply of water and discontinue syringing, securing a circulation of air constantly, and freely ventilate when favourable; but sun heat should be husbanded, and will do no harm if the atmosphere is not confined, a little ventilation being given so as to allow of the moisture escaping instead of condensing on the fruit and causing it to crack.

PEACHES AND NECTARINES.—Early Houses.—The foliage of trees started in December and early January is now beginning to fall, the trees all the same must not lack moisture, affording water or liquid manure to weakly trees as necessary to maintain the soil in a moist but not a saturated condition, as if too much water is given when the trees are going to rest, and the weather continues hot, the excessive moisture at the roots is apt to cause premature growth, which must be guarded against. It does not much matter about rain, as in that case the trees will be exposed, and the air is correspondingly cool; indeed, rain has a most beneficial and invigorating tendency. As a safeguard against starting the bloom buds, allow such laterals as are green and unripe to remain as an outlet for any excess of sap, they being equally effective in maintaining activity at the roots. Early forced trees do not as a rule make strong growth, having generally a larger proportion of single fruit buds than trees grown under more favourable conditions, triple buds not being so frequent; hence in pruning it is not desirable to cut back next year's bearing wood unless they are of great length, and not then unless necessary to originate growths for the furnishing of the trees, or to secure an evenly balanced head. Very little pruning will be needed provided disbudding has been attended to, no more wood being trained in than is required to replace the bearing wood of the current year, and to renew worn-out growths, as well as to provide for the proper extension of the trees. Trees that have long been subjected to early forcing are seldom vigorous, but not infrequently become so enfeebled as to need the removal of the weak growths, which, though plentifully furnished with fruit buds, are undesirable from their affording much smaller fruits than are yielded by the moderately vigorous and well-ripened growths. Some trees, however, from their indifferent crops make too vigorous or long-jointed wood, pushing laterals difficult to restrain, if they do not frustrate the formation of fruit buds, and interfere with an equal distribution of the sap. Any trees which grow too luxuriantly must be lifted, whilst those which are showing symptoms of weakness may have the old soil carefully removed from amongst the roots, applying fresh turfy loam with about a twentieth part of crushed bones and wood ashes mixed. Give a good watering both to the lifted trees and to those that have had the soil renewed about the roots. These operations require to be performed as soon as the leaves are mature, and before they fall from the trees.

Succession Houses.—Do not neglect to cut away the shoots that have borne fruit unless required for extension, and all the shoots where the growths are too crowded should be thinned. This will allow the foliage to be more readily cleansed by the syringing, repeating as necessary, it being important that the foliage be kept clean and healthy as long as possible. With the freer access of light and air the buds will form perfectly, attention being given to a due supply of water to the roots. Where the fruit is ripening a free circulation of air will enhance the quality considerably, sufficient water only being given at the roots to prevent the foliage becoming limp, and secure air moisture by an occasional damping for the benefit of the foliage, also fruit, which in an arid atmosphere is liable to become mealy, whilst it ripens prematurely if the trees suffer for a proper supply of moisture in the soil. Ants in some cases are apt to be troublesome, eating into the choicest and best fruits. Perhaps the best remedy is to procure a mixture of honey with arsenic duly prepared by a chemist, but we have a strong aversion to its use in fruit houses after the fruit commences ripening, therefore sink some saucers in the ground level with their edges, and as near the stems of the trees as practicable, pouring syrup or treacle into each saucer. The active creatures leave the fruit for the sweetness. Our greatest trouble this year are slugs, they are a perfect nuisance, attacking Nectarines in great force, and are not readily detected amongst the foliage with a lantern, which, however is the only means of riddance, and to prevent their excursions have wrapped some cotton wadding around the stems of the trees. The slugs do not like the downy skin of the Peach nearly as well as the smooth one of the Nectarine.

Late Houses.—Attend to thinning and regulating the summer growths, and if they are laid in thinner than is customary with trees in earlier houses the wood will have a better chance to ripen. Gross growths appropriate an undue amount of sap, preventing an equal distribution, and favour nothing but unfruitfulness and gumming. They must be stopped or removed. Endeavour to secure an even balance of moderately strong short-jointed wood, and to ensure its ripening ventilate freely in the early part of the day, allowing a good heat from sun

through the day, closing in good time so as to run up to 85° or more, for sun heat after evaporation has been going on some time will not do any harm if only care is taken to admit a little air before nightfall to allow the pent up heat and concomitant moisture to escape, and the gradual cooling down of the temperature, thereby securing rest. The night and early ventilation tends to the solidification of the wood and its ripening. Keep the trees free from red spider by forcible syringings until the fruits give indications of ripening. The borders must be well supplied with water or liquid manure, and be mulched with short manure.

VINES.—Early Houses.—The Vines have the wood ripe, and the foliage or some of it is falling, but there must not be any attempt at removing it, nor to cut the laterals closely in, as that would probably cause the principal buds to start; therefore remove the laterals by degrees and shorten some of the long shoots, preserving, however, some growth, especially when the principal leaves are down, above the buds to which the Vines are to be pruned, the final pruning being deferred until the early part of next month. The old surface soil should be removed and forked from amongst the roots, taking the opportunity of raising any that are deep and laying them in fresh material nearer the surface. Good calcareous loam is the most suitable, with a twentieth of crushed bones and wood ashes. If the soil be light add a sixth of clayey marl; if heavy, a sixth of old mortar rubbish. Charcoal is an excellent addition to the extent of a tenth. Give a moderate watering, and the roots will push, especially adventitious ones, from near the collar into the new soil above, and be in capital condition for a start when the time comes round. When lifting or renovating the border is deferred until the leaves are all down the start is not nearly so satisfactory.

Midseason Houses.—The Vines have done well as regards crop, but there is probably more shanking and want of colour in Grapes than usual. This may be an outcome of last year's cold, moist weather, and want of sun. The Grapes have been slow in acquiring bloom and colour, and though not so well furnished as desirable the berries are larger than ordinary, and are pronounced excellent in quality. Red spider has been rather troublesome, and though we have tried most remedies we find thinly coating the pipes whilst hot with a thin wash of sulphur and skim milk most efficacious. Copious supplies of water through a good surface mulching and occasional supplies of liquid manure of a sustaining rather than of a stimulating kind are most contributory to a satisfactory result. Madresfield Court is taking its place—the foremost of midseason Grapes. Fire heat has been necessary to secure the necessary ventilation by night as well as day and secure a circulation of air. The heat, however, has been kept down at night so as to give time and rest to Vines carrying heavy crops in order to perfect them.

Late Houses.—Continue to afford full supplies of water through a good surface mulching, and until the Grapes are well advanced in colour, for most late Grapes take a long time to perfect thoroughly; and some, particularly Mrs. Pince (which has a larger per-centage this year of stoneless berries than common), even after appearing finished, are not so up to the shank, which is often a consequence of too early stopping the supplies of food, and in some cases the result of a too short duration of the feeding is manifest in the Grapes shrinking. All late Grapes require time; they ought now to be colouring or advanced therein, and then they will, with a circulation of warm rather dry air constantly, attain a fulness of berry and a perfection of finish. Indeed, poverty of finish is the chief cause of shrivelled Muscats and others shrinking after they have hung some time. Afford a temperature of 70° to 75° by day artificially, 80° to 90° with sun, and close sufficiently early to increase to 90° or 95°. When the sun is losing power put on enough top and bottom air to insure a circulation; allow the temperature to gradually cool, which rests the Vines, and increase the ventilation early with the advancing temperature. The pipes should, if necessary, have a little warmth in them, to prevent the temperature falling below 65° at night.

THE FLOWER GARDEN.

Propagating Summer Bedding Plants.—An early start must be made with the propagation of various bedding plants in order to have a good stock for keeping through the winter. In many instances the cuttings are softer and more plentiful than usual, and no difficulty ought to be experienced in striking sufficient of them.

Tuberous Begonias.—Few realise how very easily these may be raised from cuttings. Now there are so many superior varieties that can be obtained from seed or bought at a comparatively cheap rate it is unwise to perpetuate the stock of inferior forms, and only the best, therefore, should be marked both for propagating and storing purposes. Any side shoots that can well be spared from plants either in beds or pots should be taken off-cut to a joint, the lower leaves being trimmed off, and then dibbled into a bed of sandy soil and covered with hand-lights; or if they are plentiful a few inches of sandy soil may be placed on a shallow bed of half-decayed manure in a frame and the cuttings inserted in this. They require no shade or bottom heat, and only enough water to prevent shrivelling. Earlier in the season cuttings will strike root in a sunny border as readily as Zonal Pelargoniums, but it is rather late to try this plan now. These late-struck cuttings will make no top growth, but will form small bulbs, which may be lifted, stored in dry sand during the winter, and when started into growth next spring will surpass, as far as vigour is concerned, any that may be raised from seed.

Verbenas.—Although not so much grown as of old they are still a

very showy class of bedding plants, and would be more often seen if healthy cuttings could be had in abundance every spring. Too much fire heat is responsible for numerous failures with Verbenas, but if a good stock of plants were raised in the autumn, and wintered in comparatively cool quarters, these would yield superior cuttings when wanted. Too often they are rooted thickly, and kept in a hard, starved condition through the winter in 5-inch pots, and these fail to produce the requisite soft, clean cuttings. The best plan is to at once prepare a frame, large or small according to the requirements of the garden, by placing in the bottom from 9 inches to 12 inches of half spent hotbed material, this being made firm and covered by about 3 inches of fine compost, consisting of loam, leaf soil, and silver sand in equal parts, and which when made firm and smoothed over with the back of a spade, is ready for the cuttings. Select quite young flowerless shoots, these being found springing from the centre of the plants. All should be cut to the third or fourth joint, and after the lower leaves are removed be at once dibbled out thickly. A gentle watering, or enough to well fix the cuttings and to thoroughly moisten the soil, ought to be given, the lights being then placed on, kept close for a time, and the cuttings heavily shaded from sunshine. They must not be hurried, but after they have recovered some portion of their freshness a little air may be admitted every warm evening, and in dry weather syringing every morning is beneficial. When struck, and before the roots are matted together, all ought to be placed thinly in boxes or pans filled with moderately rich loamy compost, and be kept rather close in a cold frame or pit till well established in their fresh quarters. Subsequently they should be well hardened, and kept during the winter in a cool house or dry pit.

Ageratums.—Although these come well from seed, cutting-raised plants obtained from a good stock are most to be relied upon for effect. Unfortunately they are apt to bloom so very freely that suitable cuttings for striking in August or the early part of September are not often procurable. What are needed are soft shoots without the bloom head being far advanced. These can be rooted in pans or boxes stood in a close frame, or the cuttings can be treated exactly as advised in the case of Verbenas. After August a little bottom heat is usually necessary for propagating these and various other plants. *Ageratums* may be wintered in a moderately warm greenhouse or pit, and the pots, boxes, or pans containing them should be well drained.

Heliotropiums.—If the advice has been taken of reserving a certain number of spring-struck plants for pot culture, these, in addition to affording a good late display of flowers, will yield abundance of young shoots when placed in heat next spring. Old plants do not lift well from the open ground, and if there are no plants it is advisable to attempt propagating some now. A mild hotbed is of good service in propagating these as well as other plants that will be mentioned. Select short young shoots, cut to a joint, trim off the lower leaves, and dibble them thinly into pans or well drained pots of fine sandy soil. Being kept close and shaded they strike moderately well, and may be wintered in any house from which frost is excluded.

Iresines, Coleuses, Alternantheras.—In each case the simplest method of providing a good stock of plants is to reserve the requisite number of spring-struck for pot culture. If the two former are duly transferred to 5-inch pots and pinched back a time or two, good bushy plants would be available for housing any time before cold frosty weather sets in. Four-inch pots are quite large enough for *Alternantheras*, the soil in larger sizes being apt to become sour. Failing this, well established stock tops from old plants should be rooted in gentle heat and kept in the store pots till the spring; five or six plants or cuttings being ample for a 5-inch pot. All should be wintered on shelves in a warm house.

Lobelias.—The dwarf bedding sections of these can now be had very true from seed, but there are many who still prefer to raise the requisite number of plants from cuttings of a superior named variety. For the purpose of wintering for stock purposes, plants raised from cuttings are preferable to old plants lifted from the open ground. Young flowerless shoots taken off and otherwise treated in every way as directed in the case of Verbenas, will yield a profusion of strong cuttings in the spring, or the plants may be divided freely. It is also a good plan to raise the requisite number of seedlings in the autumn rather than in the spring. The seed should be sown on the surface of a previously moistened pan of fine soil, covered with a square of glass, and set in a shaded frame till it germinates. Winter the seedlings on a dry light shelf in a cool house, and if prevented from damping off, thousands of sturdy plants should be available for pricking off long before it is possible to raise them in the spring.

Antirrhinums, Pentstemons, and Phloxes may all be raised from cuttings made from side shoots and treated similarly to Verbenas, being wintered in cold frames, or the seed of the two former may be sown in pans now, and the seedlings pricked out in the spring.

THE BEE-KEEPER

NOTES ON BEES.

THE HEATHER HONEY PROSPECTS.

PERHAPS not in the memory of man has the prospect of so large a yield of honey from the Heather been so great as it is at

present, nor can we recall a single year that bees gathered to the same extent in July. In a week's time from the 24th of that month good hives rose in weight from 50 to 60 lbs., almost filling to completion two covers of supers from 40 to 50 lbs. in weight, and the Heather not nearly in full bloom, nor will it be till about the 12th August, and will then continue for three weeks longer. We have had three days' rain; but now there are signs of finer weather, and should it continue for a fortnight it will result in one of the largest yields of honey ever recorded, and fully substantiate the necessity for bee-keepers to adopt full-sized hives.

It is a great mistake keeping bees in small hives when larger hives are storing in the body preparatory to the filling of many more supers than any undersized hive can possibly do. I am writing this on the eve of starting for the moors, where my bees will require constant attention. If fair weather sets in I have not the slightest doubt but strong hives when the Heather is in full bloom will gather 20 lbs. of honey daily.

STINGLESS BEES.

Some persons are surprised when they hear about the foreign stingless bees; but they will be all the more so when told that there are native stingless humble bees. These can be recognised by their white abdomen and yellow and black thorax.

THE LATEST OUP.

We are always glad to hear of anything new that is good, and always give credit to the discoverer or inventor. I have long advised youthful queens, not only for preventing untimely swarming, but for strong colonies, and am glad to know that some writers have benefited from my advice. It appears, however, that some editors do not agree with me, as one of these in a contemporary in reply to a querist says, "Young queens breed comparatively slowly for the first few months." This is not my experience, and what induced such an answer may be more readily imagined than explained. Young queens are as a rule not fertilised until the time the greatest laying is past, or at the time it is going on; and few young queens have an opportunity of laying to their fullest extent, being generally with second swarms or old stocks. I have practised for nearly forty years the system of introducing young queens to first swarms suspected of having effete queens; and never yet knew a single case where young queens improved in their laying after the first few weeks of their life. As to "months," no bee-keeper can test properly queens after July. It is to be hoped therefore that your readers will know from the above where to place reliance.

GARDENERS AND BEES.

Gardeners are more inclined now than they were a few years ago to combine the useful with the beautiful. Many gardeners are now bee-keepers on their own account, and many take charge of their employers' bees more cheerfully than was once customary. But there is another way bees are managed between employer and employed. The former provides all necessities, the gardener attends to the bees, and for this extra work the honey is equally divided between them. I know of one case of the kind where the gardener this year will get several cwts. of honey.—A LANARKSHIRE BEE-KEEPER.

A GARDENER'S EXPERIENCE.

I INTENDED writing to you ere this to thank you for your answers to my questions, as well as to let you know how my bees were getting on. I had a Sandringham hive from Messrs. Neighbour; it swarmed on June 12th; the swarm weighed 6 lbs., which I thought a very fair one. I put it into the hive I had from "A Lanarkshire Bee-keeper," giving it two boxes as advised, with nearly full sheets of foundation. By the 28th of June the two boxes were pretty well filled. I placed four of the small supers on the top, and when they were partly sealed placed four more on as directed. I examined them yesterday, and was pleased to find the first four put on nearly sealed over and the other four about half filled. I have not taken them to the Heather yet, the weather has been so bad of late, but as they are only one mile off some they are not taking any harm. My Lanarkshire hive has been much admired by neighbouring bee-keepers. They are quite surprised at the weight of it. I have persuaded one bee-keeper to do without excluder zinc; he is quite convinced that it is unnecessary.—C. R.



°° All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Exhibiting Grapes (Flr).—If the berries of the small and large bunches are equal in size, evenness, and colour, we should stage the larger if not very unshapely. You might have made their condition clearer if you had tried, as is apparent by your fragmentary letter.

Water Melon (W. S.).—The box and contents were crushed into a jelly-like mass, and we can only judge by a portion of rind that the fruit was a variety of Water Melon, several of which, as sold in shops, are inferior, but they vary; and as grown in frames in this country they do not equal the best varieties of Melons that are usually cultivated by gardeners.

Vine Laterals (W. E.).—If the fruit is swelling kindly thin the laterals, but do not remove them all, unless the main foliage is extra large. When the fruit is ripe and almost finished colouring, you may remove the most of them to give more light to the house, to enable the air to circulate more freely round the bunches, and to concentrate the powers of the plant more in ripening the wood. The reason for removing gradually has often been given of late. If removed all at once you would check the growth, and the fruit would not swell so well.

Terra Cotta Rose (H. E.).—As with the third box of blooms you failed to make clear what you appeared to wish us to understand, and as you mentioned that Mr. W. R. Raillem had commented on the variety when writing about Roses at the National Show two years ago, we sent the blooms to that gentleman, and his remarks thereon are published on page 138. The blooms from the Briar are larger than the one from the original bush, but the exact colour is not preserved. Whether it can be in plants from cuttings can only be determined by experience.

Luxuriant Peach Trees (E. Butler).—We presume that your wood was imperfectly ripened last autumn, and that and the frost together injured the fruit buds. That might be done and the wood buds break with great luxuriance, and then the vigour would be increased from there being no fruit to moderate its strength. In thinning, the weaker and middle-sized shoots should be retained, and the other strong ones taken away or shortened. If such thinning does not check luxuriance sufficiently, you ought to examine the roots, and either shorten or raise them early in September; doing so just so much as to check growth, but not to make the shoots flag seriously.

King of the Pippins and Golden Winter Pearmain Apples (H. O.).—The original and true King of the Pippins, which is exceedingly rare, is that described in the "Fruit Manual" under that name. The variety usually known in the markets under the names of "King Pippin" and "King of the Pippins" is the old Golden Winter Pearmain, the name of which was changed by Kirke, a nurseryman at Brompton, to suit some trade purpose about the beginning of this century. The time of ripening of Golden Winter Pearmain is given in the "Fruit Manual" as October to January, and this we have found is correct.

Pansies Dying (James).—The cause of the sudden collapse of Pansies cannot be exactly defined. It is a very old "grievance," and assuming the plants are established in good time and not twisted by the wind, there is either something in the soil that is injurious, such as grubs, or it is defective in some constituent that is requisite for the continued support of the plants. Those planted late in the spring are the most liable to "go off" prematurely, while they fail in one part of a garden and succeed in another. If you are especially anxious to grow them on the particular plot in which yours fail, you will not be likely to succeed unless you remove a great part of the old soil and introduce fresh of a suitable nature. This at least is what experience has taught us in failing and succeeding in growing these flowers. It is always the best to grow them in that part of a garden in which they "naturally do well."

Mignonette Failing (H. F. E.).—It is not safe to trust to Mignonette "sowing itself," and last year was especially unfavourable to the ripening of the seed. Nor can it be expected to grow and flower

satisfactorily on the same ground yearly without the addition of suitable manure. As your plants fail in the centre of the bed, and grow well towards the outside, it would seem as if the necessary constituents for the support of the plants were extracted by the previous crop. Moreover, the plants cannot be depended on to grow so well from seed sown in May as when raised earlier and take deep root before the occurrence of dry hot weather. To this, with poverty of soil, we attribute the failure. The ground should be liberally manured a few months before sowing, and have some lime pointed in the spring. We find sprays of other flowers in the box, but you make no reference to them in your letter. They are, however, named below, on the assumption they were sent for that purpose.

Keeping Black Hamburgh Grapes (R. O. S.).—The Grapes being now ripe it will be necessary, in order to retain them in good condition as long as possible, to keep them cool, allowing a free circulation of air night and day, and when the sun is very powerful it will be necessary to shade for a few hours in the hottest part of the day. Sprinkling the floors in the early part of hot days will also be beneficial. Sufficient water must be afforded the border, especially that inside, to maintain the foliage in good condition. The shading will only be necessary during hot days this month and early September. Keep the laterals closely stopped to one joint, and examine the bunches occasionally for decayed berries, which must be removed promptly. Fire heat will not be necessary for the next six weeks, unless the weather prove very wet and dull, when a little by day will be beneficial so as to admit a change of air, not raising the temperature by that means above 60° in the daytime, and turn off the heat early, so as to have the pipes cool before night. After September an equable temperature of 45° to 50° should be secured as far as practicable, and the Grapes will keep till November, probably later if they have been well finished.

Hydrangea paniculata (B. R.).—This plant can be readily propagated by cuttings of half-ripened wood taken from the plant after flowering and inserted under handlights placed on the shady side of a wall or hedge. Younger growths can also be employed for cuttings, and these will root quickly if inserted either singly in pots or a number together (the first method being preferable), and placed under handlights or in a close frame until they are rooted. If propagated in heat give a good watering after insertion and keep the cuttings close and well shaded afterwards until they are rooted; cuttings possessing two joints—one to be in the ground and the other just above the soil—will suffice. The chief secret of flowering this *Hydrangea* well in a pot is the thorough maturation of the wood. After flowering the plant should be hardened and placed outside, then in autumn or early spring should be closely pruned back; if one pair of eyes is left on the new wood that will be ample. By giving your plant greenhouse treatment after the new year you will be able to have it in flower by the end of the month of June. If required earlier it must be subjected to forcing; an intermediate temperature is best for this purpose, where a fair amount of air can be given daily when favourable to maintain a dwarf sturdy growth. If forced in a close warm house its growths will be weakly and may fail to flower; but they flower freely under a more judicious system of forcing.

Making Mushroom Spawn (A. M.).—No better time for making the spawn can be selected than the end of August and the month of September. Take, as materials, a barrowload of cowdung, rather stiff, and two barrowloads of horse-droppings, with a little short straw with them, and half a barrowload of fibry loam. Mix these up into a stiff mortar-like substance until it is pretty well incorporated and looks like grafting-clay. Then make a frame either of iron or wood, say half-inch boards if the latter, and in four pieces—that is two sides and two ends, enclosing a space of 9 inches long, 4½ inches wide, and 1½ inch deep. Then obtain a flat clean board and a bucket of water, dip the frame in the water, place it on your board, fill it with the prepared dung, strike level with a spade or trowel, and turn out the brick on boards, to dry on its flat side. In a couple of days make two holes in the bricks, but not going through—say three-quarters of an inch in diameter, turn the bricks until they are tolerably dry, then into each hole push a piece of good spawn, and draw a little cowdung or clay over it to prevent its falling out. Next make up a slight hotbed of litter, on which build these bricks in open honeycomb or pigeon-hole fashion, and cover over with litter, so that these spawned bricks shall have a temperature of from 80° to 85°, and not more. As the spawn runs, the bricks must be examined, and, as soon as they are filled with the gossamer-like white spawn threads, removed, and kept in a dry place until wanted for use. Some bricks or pieces will be ready to remove before others.

Peach Leaves Skeletonised (B. Hall).—The leaves which you have sent have not been eaten by any insect. The immediate cause of the injury to the foliage is scorching, but there may possibly be a more remote cause that has led to the evil. If you carefully examine the injured leaves, which at the first glance appear as if they had been eaten by an insect, you will find first a dark discoloration, then a shrinkage of those parts where the tissue has been ruptured, and which eventually separates from the healthy portions of the leaves, and thus form holes and fissures. If the roots of the tree were healthy and active and could obtain the requisite moisture for the support of the growth, the evaporation would not have been so disproportionate with the supply of sap, and the withering would not have occurred provided there was no fault in the glass that led to scorching. As a remedy we should first shade the tree, either by sprinkling limewash on the glass or

covering with tiffany, and syringe judiciously to keep the foliage fresh, then examine the roots and rectify any mistake that you may find there. The border may be too dry at the bottom, or the soil not sufficiently fertile, needing liquid manure, or the roots may have come in contact with something that has injured them. Examine also the stock of the tree, which may not be healthy, or the sap vessels may be too contracted. By some cause or other the supply of sap is insufficient, the sun extracting the moisture from the foliage faster than it is supplied by the roots. A close examination founded on these suggestions will probably lead to the discovery of the real cause of injury, and a remedy will possibly be dictated by the circumstances of the case. We have further to add that we have seen Peach leaves injured in exactly the same way by excessive fumigation, the material not having perhaps been the safest and best for the purpose.

Peaches Falling—Split Stones (C. R.).—There is more mishaps in Peach culture through the constituents and formation of the border than anything else, the borders being formed of too light and rich soil, too wide and too deep, so that the roots run riot in the open and stimulating material, making large leafage, which demands large supplies of sap to sustain the loss consequent on evaporation. This, when the trees are in full foliage, is considerable, and attains its maximum about the time the stoning of the fruit is completed. The fruit may stone satisfactorily, but it does not swell well afterwards, and ultimately drops or ripens prematurely—poor in flesh and, though juicy, is flavourless. This is the result of the defective supplies of food in the last stage of stoning and in the final swelling of the fruit. The remedy is a moist condition of the atmosphere—less air by day so as to lessen evaporation, combined with efficient and recurring waterings through a good surface mulching of lumpy manure. A firmer and more retentive soil is also essential, therefore we advise lifting the trees as soon as the leaves give indications of ripening, and adding some clay marl to the soil, making the border firm. The stone-splitting rarely appears in trees that have small flowers, being mostly confined to the large-flowered varieties, and it occurs equally with Nectarines as with Peaches. It is usually attributed to imperfect impregnation of the blossoms, but it is a fact also that lime containing much phosphoric acid is more beneficial in this case than that containing only a small percentage. Some lime contains as much as 7 per cent., and such when used as a source of calcareous matter has a decided effect upon the stones of fruits in preventing splitting. Iron also has a favourable effect, but the most satisfactory results attend in cases of this kind the application of mineral phosphates—i.e., coprolites, discontinuing the use of nitrogenous manures for a time, and even when the trees have sufficient vigour. Perhaps stone-splitting is as much a defect of soil constituents as of defective fertilisation; but until we have the result of some experiments we are making with a compound of phosphorus, iron, sulphur, &c., on Peaches, also Grapes, to elucidate some points in respect of shanking and non-colouring, nothing definite can be advanced. This is mentioned so that no reproach may attach to cultivators who have Peaches with split stones, as this occurs with the best of growers.

A Mysterious Vine Disease (G. T.).—The samples of laterals sent, small and hard like wire, with apologies for leaves having the appearance of being scorched and tanned, represent a disease with which we are quite familiar, and the cause of which is not determined. We have often had occasion to refer to it, and nowhere is it so well described as in Mr. Barron's "Vines and Vine Culture," as follows:—"A disease which seems to be either rare or of recent origin, for it is not described in any book we know, is a certain strange affection of the shoots and foliage, which—in lack of an authorised name—Mr. Blackmore of Teddington, who has directed our attention to this malady, suggests may be termed diphtheritis or lorification, for the parts attacked assume ere long the consistency of leather, and finally that of wire almost. The first symptom is a contraction of the margin of the half-grown foliage, till the leaf becomes like a cup inverted, then the stem loses its crisp clear substance, goes dull, and is channelled with lines of shrinkage. The tips of the shoots become flat and flaccid, all the gloss is lost, and the vigour gone; and the disease descends from leaf to leaf until the whole tissue is hardened, and the young wood becomes of a dirty black tint. The growth of the season is stopped, and the main stem instead of gaining in bulk is lessened. Young Vines alone, so far as our present knowledge goes, are affected by this disorder, but they seem to take it alike whether grown in pots or planted in their places. The roots appear to be perfectly healthy; the growth is robust and vigorous; the house has been managed as usual, there are no cold draughts or sudden changes, defects or excesses of temperature; but suddenly this disease appears, and Vine after Vine is afflicted. The malady is contagious, or at any rate epidemic. The symptoms seem to be distinct from all the recognised forms of mildew, and cannot be checked by the use of sulphur, yet further investigation may prove that it is of fungoid origin. The only treatment we can recommend is to cut below the parts affected, remove the tainted growth from the houses, and stimulate the Vines if they have strength left to form healthier foliage." You will agree that is an admirable description, but all the leaves on the weak laterals which are produced in a sluggish manner after the leading growth is arrested are not malformed, though in other respects this description applies. We suspect the disease is of fungoid origin, and we have never known it cured by any application, though many have been tried, but we have known healthy growth and strong canes to follow when the Vines have been cut down quite below the affected parts, though some we have seen affected to the base and

ruined. We now leave you to proceed according to your judgment as a competent gardener, and we shall be glad to hear with what result.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*A Bristol Subscriber*).—We do not undertake to name Melons. There are many raised which have no recognised names, and when seed is purchased the names of the varieties are on the packets. (*C. M.*).—The Apple resembles the Red Hawthornden, but the characters are not developed.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H. F. E.*).—1, *Oxalis corniculata rubra*; 2, *Lycasteria formosa*; 3, *Euphorbia Lathyris*. (*H. O.*).—1, *Pancratium fragrans*; 2, *Achillea Ptarmica flore-pleno*; 3, *Insufficient*; 4, *Adiantum assimile*; 5, A crested variety of *Adiantum cuneatum*. (*A. F. S.*).—*Adiantum scutum*. (*W. H.*).—*Miltonia Regnelli*. (*W. O.*).—*Lycaste fulvescens*. (*G. S.*).—*Tecoma radicans*. (*R. S.*).—*Euphorbia Lathyris*, the Cape Spurge.

COVENT GARDEN MARKET.—AUGUST 14TH.

Soft fruit is now finished, and our market is settling down to a quiet trade. Supplies of indoor fruit heavy.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve.. ..	2	0 to 4	0	Oranges, per 100	4 0 to 9 0
" Nova Scotia and	7	0	16 0	Peaches, dozen	8 0 12 0
" Canada, per barrel	0	0	0 0	Plums, $\frac{1}{2}$ -sieve	4 0 7 0
Cherr'es, $\frac{1}{2}$ sieve	0	0	0 0	Red Currants, per $\frac{1}{2}$ -sieve	0 0 0 0
Grapes, per lb.... ..	0	0	2 6	Black "	0 0 0 0
Lemons, case	10	0	15 0	St. Michael Pines, each	2 0 6 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.				
Artichokes, dozen	2	0 to 3	0	Lettuce, dozen	0	9 to 1	3		
Asparagus, bundle	2	0	5	0	Mushrooms, punnet	0	6	1	0
Beans, Kidney, per lb.	0	3	0	6	Mustard & Cress, punnet	0	2	0	0
Beet, Red, dozen	1	0	2	0	New Potatoes, per cwt.	3	0	9	0
Broccoli, bundle	0	0	0	0	Onions, bushel	3	0	4	0
Brussels Sprout, $\frac{1}{2}$ sieve	0	0	0	0	Parsley, dozen bunches	2	0	3	0
Cabbage, dozen	1	6	0	0	Parsnips, dozen	1	0	0	0
Capicums, per 100	0	0	0	0	Potatoes, per cwt.	4	0	5	0
Carrots, bunch	0	4	0	0	" Kidney, per cwt.	4	0	8	0
Cauliflowers, dozen	2	0	4	0	Rhubarb, bundle	0	2	0	0
Celery, bundle	1	6	2	0	Salsify, bundle	1	0	1	6
Colowerts, doz. bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0
Cucumbers, each	0	3	0	6	Shallots, per lb.	0	3	0	0
Endive, dozen	1	0	2	0	Spinach, bushel	3	0	4	0
Herbs, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0	0
Leeks, bunch	0	3	4	0	Turnips, bunch	0	4	0	0

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 12 blooms ..	2	0 to 6	0	Maidenhair Fern, doz.	
Asters, per bunch, French ..	0	9	1	bunches	4 0 to 9
" dozen, English ..	3	0	6	Marguerites, 12 bunches ..	2 0
Bouvardias, bunch .. .	0	6	1	Mignonette, 12 bunches ..	1 0
Carnations, 12 blooms ..	1	0	2	Myosotis or Forget-me-nots	
" 12 bunches ..	3	0	6	doz. bunches ..	1 6
Chrysanthemums, dozen				Pansies, dozen bunches ..	1 0
blooms	1	0	3	Pelargoniums, 12 trusses ..	0 6
Chrysanthemums, dozen				" scarlet, 12 bunches ..	2 0
bunches	3	0	6	Pinks (various) 12 bunches ..	3 0
Clove Carnations, 12 bunches ..	4	0	6	Polyanthus, doz. bunches ..	0 0
Coriander, doz. bunches ..	1	0	3	Roses (indoor), dozen ..	0 6
Eucharis, dozen ..	2	6	5	" Mixed, doz. bunches ..	3 0
Gardenias, 12 blooms ..	2	0	4	" Red, dozen bunches ..	4 0
Gladioli, per bunch ..	0	6	1	" 12 blooms ..	0 6
Gladiolus breuchleyensis,				" Tea, white, dozen ..	1 0
doz. sprays	1	0	1	" Yellow	2 0
Lapageria, 12 blooms ..	1	0	2	Spiraea, doz. bunches ..	0 0
Lavender, dozen bunches ..	4	0	6	Stephanotis, doz. sprays ..	2 0
Lilium auratum, 12 blms ..	2	0	4	Stocks, dozen bunches ..	3 0
Lilium candidum, 12 blms ..	0	0	0	Sweet Peas, doz. bunches ..	2 0
Lilium longiflorum, 12				Sweet Sulan, ..	3 0
blooms	2	0	5	Tuberose, 12 blooms ..	0 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.				
Aralia Sieboldi, dozen ..	6	0 to 12	0	Fuchsia, per dozen.. ..	4	0 to 9	0		
Aran Lilies, per dozen ..	0	0	0	Geranium, Ivy, doz. ..	3	0	5	0	
Arbutus (golden) dozen	12	0	24	0	Hydrangea, per dozen ..	9	0	18	0
Asters, 12 pots.	4	0	6	0	Labrador, per dozen ..	3	0	6	0
Begonias, various, per doz.	4	0	12	0	Marguerite Daisy, dozen	6	0	12	0
Balanias, per dozen. . .	3	0	6	0	Mignonette, per dozen ..	3	0	6	0
Calceolarias, per doz. . .	9	0	18	0	Moss, per dozen	2	0	4	0
Calceolaria, per dozen ..	4	0	8	0	Myrtles, dozen.	6	0	12	0
Christmas Rose	0	0	0	0	Nasturtium, per dozen..	2	6	4	0
Chrysanthemums, dozen	6	0	15	0	Palm, in var., each .. .	2	6	21	0
Cockscomb, per dozen ..	3	0	6	0	Pelargonium, scarlet, 12	2	0	4	0
Dracuncularia, doz. . . .	24	0	42	0	Pelargonium, per dozen	4	0	9	0
Draena viridis, doz. . . .	12	0	24	0	Rhodanthe, per dozen ..	3	0	6	0
Erica Cavendishii, doz ..	0	0	0	0	Saxifraga pyramidalis,				
Erythronium, var., dozen	6	0	18	0	per dozen	0	0	0	0
Evergreens, in var., dozen	6	0	24	0	Solenums, per dozen ..	6	0	12	0
Ferns, in variety, dozen	4	0	18	0	Spines, per dozen	0	0	0	0
Ficus elastica, each .. .	1	6	7	0	" palmata, per doz. . .	0	0	0	0
Foliage plants, var., each	2	0	10	0					



AUTUMN TILLAGE.

AMONG the manifold advantages of clean land, the facility of prompt and timely tillage is by no means the least. Without foul perennial weeds to hinder, each process of husbandry becomes comparatively light, easy, and inexpensive, and we are able to keep always well abreast of our work. Two or three weeks ago the Yellow Suckling (*Trifolium minus*) was harvested for seed; as soon as it was carted the land had a heavy dressing of pig dung, which was at once ploughed-in, the carting direct from the yard, spreading and ploughing all going on together; a Cambridge roller was then passed over the field, and it will be so left in readiness for Wheat sowing in September. This work was nicely out of hand before the general harvest began, and the advantage of thus having land ready for the seed drill in autumn is very great. The Trefoil is given as a familiar example of everyday practice, but there are other crops, such as winter Tares and first-cut seeds, which are cleared sufficiently early for the land to be available for a similar purpose. It will be apparent that our aim here is to enforce a principle, and not simply a way to provide for the early sowing of Wheat.

Autumn tillages point more to a steady and persistent effort to have the land clean, whether we require to turn it to account for winter corn or catch crops, or not. In a season so favourable to growth as this has been the majority of stubbles will be foul, and by bringing the broadshare or paring plough quickly into use the seeding of Thistles, Hog-weed, Cotton-weed, &c., will be prevented, and much labour in hoeing next spring avoided. Seedling Couch Grass, too, will be destroyed, and the spreading of its roots deep down in the soil prevented. Charlock seed of the current year's crop which has fallen upon the surface will also be started into growth. Sometimes the harrows may follow the broadshare at once with advantage, but all such work is necessarily affected by the condition of the soil. Once get rid of superficial growth, and then let the ploughs follow as quickly as possible. We often envy light land farmers, who are able to turn over their land so easily with double or two-share ploughs drawn by two horses. The present season is a most favourable one for them—their crops are excellent; they will all be off the land long before those of heavy land farms, and they certainly ought to derive full advantage from early autumn tillage. Three or four stout able lads well accustomed to horses get through much of such work while the men are at harvest. They should be looked closely after, and encouraged by extra pay and example to do their utmost to push on the work. A healthy spirit if emulated should be fostered among them, and while urging them to activity due care must be taken that there is no ill-treatment of the horses. A lad who was seen flogging a horse badly, in reply to remonstrance said he had charge of the horse and should do as he pleased. He had to be temporarily suspended from duty before he could be brought to his senses.

When the manager of a home farm is so fortunate to have his own steam tackle it can be turned to full account at once to break up the stubbles, but it must not be forgotten that the cultivator requires to be followed by the harrows and heavy rollers to get twitch out of the soil, and it is well to leave each field in as suitable condition as we can for the next crop. To do this in the best way horse and steam power are often used in the same field. The doubtful nature of spring weather has to be remembered, and the soil that is not to be sown till then is when cleaned either ploughed simply in the ordinary manner, or it is first ridged, and then the ridges are split into other ridges by the double-breasted

plough and so left. Then when seed time comes round again in spring we have only to harrow down the ridges to have a fine seed bed quite ready for the drill, and the corn sowing is done both quickly and well.

Very much of autumn tillage is therefore prospective, as indeed so much of the farmer's work must be if he would turn his opportunities to full account. But much good work may yet be done for the present season in view of sowing such catch crops as white Mustard, Cole, stubble Turnips, Kale, Cabbage, and *Trifolium incarnatum*. For the latter crop we have only to take the first clean stubble available and sow the *Trifolium* broadcast, following with the harrows once or twice as appears necessary. If sown at all it must be sown early in order to have a full plant well established before winter. Wherever it answers it is highly valued for the early supply of forage it affords in spring. Mustard sown now depends upon showers to induce germination and sufficiently strong growth to render it useful for folding in autumn, and the crop is decidedly a speculative one, but is nevertheless well worth trying for.

WORK ON THE HOME FARM.

Harvest is now in full swing, and all that is possible must be done to save the corn in sound condition. Much of it is sadly beaten down, and the work of reaping and binding is proportionately laborious. In many fields self-binding reapers are quite useless, and even the ordinary reaper cannot always be used. All this tells upon the cost, and also hinders the work. Very much of the Wheat comes down in excellent order, and the samples are likely to be good enough to compete fairly well with foreign corn. Oats are good generally, and care should be taken to cut them early. The corn is riper than the straw, and if tied into sheaves they must be left a long time in shock and turned at least once. We prefer not to tie Oats, but to mow in swathes and turn them, taking care to cut only when dry and well harvested, so as to avoid all risk of overheating in stacks. There is no doubt that many Oats are spoiled by mismanagement, and yet only ordinary care and judgment are required for them.

To bind Barley or not is an open question. If left till quite ripe, as it always should be, it is best—i.e., more safe, if the weather is at all unsettled. So far Barley has not suffered, and with fine weather now we hope to have a fine bright sample such as maltsters love. Maltsters have had to use so much imported Barley of late that fears have been entertained of serious permanent harm to the market for home produce. But it is generally conceded that imported Barley is decidedly inferior to the best British grain, and we believe the climate of this country to be especially favourable to the production of a superior sample if only we can have fine weather for the ripening and harvest. Whenever corn is tied let there be no slovenly shocks, but have the sheaves well set up to throw off rain as it falls. We have already seen much slovenly work in shock building this season. Let the shocks be small, the sheaves leaning inwards slightly, and the rows run from north to south, so that they may dry quickly. Make good substantial stack bottoms, build carefully so that there is no risk of the stack leaning over in any direction, and take especial care always to leave the middle of the stack full, so that the rick cloth may throw off rain as it falls.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

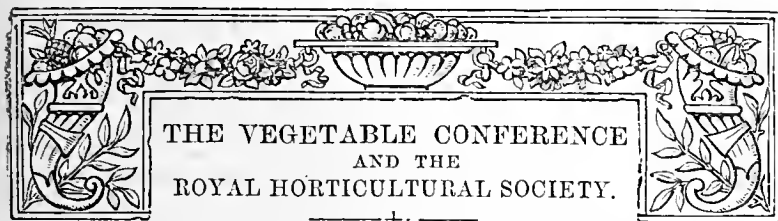
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rel.
	Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tempe- rature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1890. August.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	4	30.000	64.8	59.5	N.	62.1	75.0	54.8	116.2	51.3	0.014
Monday	5	29.733	61.6	59.2	S.E.	62.2	71.4	57.8	115.0	56.6	0.169
Tuesday	6	29.741	60.4	54.3	S.W.	60.6	70.0	53.4	118.4	49.4	0.021
Wednesday	7	29.969	62.7	56.3	S.W.	60.7	71.3	51.9	119.4	48.9	—
Thursday	8	30.124	61.5	56.2	W.	61.2	72.0	49.4	118.9	45.7	—
Friday	9	29.959	61.6	56.7	N.	61.7	65.2	53.6	122.2	50.4	0.128
Saturday	10	29.789	59.6	56.2	S.	60.4	68.8	51.4	118.9	48.6	0.111
		29.901	60.7	56.9		61.4	70.5	53.0	112.7	50.1	0.361

REMARKS.

- 4th.—Fine morning; dull and close; rain at night.
 5th.—Heavy showers at 10.25 A.M., 0.45 and 5.30 P.M., and generally bright between.
 6th.—Generally bright and fine, but two or three slight showers.
 7th.—Bright and fine.
 8th.—Fine and generally bright.
 9th.—Cloudy morning with showers; wet afternoon and evening.
 10th.—Fine, with some sunshine in the morning; bright afternoon.

An unsettled week. Temperature nearly 5° below that of the preceding week, and very near the average.—G. J. SYMONS.



REFERENCE was made in a short note last week to this project, but its importance demands more prominence than has yet been accorded. Exhibitions of flowers are beautiful, and conferences in connection therewith interesting and instructive. From time to time the special gatherings have not only given satisfaction to those who participated in them, but have been the means of eliciting information; and this, being disseminated, has been of service to the flower-loving community, which we are glad to believe is increasing rapidly year by year. Congresses on fruits and representative samples of the different varieties have been similarly acceptable to a large section of the horticultural public, and there cannot be a doubt that knowledge thus concentrated, then reflected to the world through the Press, has been of substantial value to numbers of persons, and these are also happily increasing, who are engaging in the cultivation of hardy fruit. It is fitting that the Royal Horticultural Society should not only countenance but give distinct encouragement to every section of the great industry of which it is the national exponent. This in fact is the keynote of its charter—the advancement of horticulture both useful and ornamental, scientific and practical. At no time was the disposition greater to fulfil all obligations incurred by the Society than at the present time, and as far as means allow to carry out its functions; but whether the methods adopted are the best is a question that is fairly debatable. As is apparent by a perusal of the last issue of the Society's Journal the scientific and the ornamental have had a fair share of attention, and now comes the turn of the "useful and practical."

A vegetable conference, though the term is a misnomer, was due to preserve the balance of the Society's operations, and is now in a fair way of being realised. It has been alleged that the same energy has not been exerted in the furtherance of this gathering of an essentially useful character that was displayed in the preparation of the Orchid and some other special gatherings of an ornamental nature. It would be difficult to show, perhaps, that great activity has prevailed in the Council in pressing the claims of the coming Conference of vegetable growers and patrons on the gardening world. We are not able to fully acquiesce in the allegations we are bound to hear, that the Council is an Orchid Council, a Daffodil Council, an Auricula and Carnation Council—in fact, anything but a useful Council, because it may possess all the floral proclivities indicated and still be useful and practical, as there cannot be a doubt it ought to be. It is to be remembered there are now gardeners on the Council Board, and it may be fairly expected that they will exert themselves in the furtherance of useful practical gardening. The overwhelming number of professional gardeners in this kingdom are not specialists; if they were they would not occupy the positions they, as a body, fill so well; nor are the majority of them who are Fellows of the Society, and it is gratifying to observe these are more numerous than ever, specially interested in a particular family of plants. Their duties, and the demands on their skill, compel them to take wider views of their calling than is thus implied, and the department of all others in which they are most deeply concerned is that which may be designated by the term comestible. The great work of gardeners therefore should be encouraged with the same zest that the work of the florist is, no matter what his "favourite flower" may be.

It is reasonable, then, to expect that those members of the Council who are gardeners will fully and fairly represent the craft to which they belong, and not only follow, but lead, as necessity may arise, in those matters in which their confrères outside are most generally interested.

It is not suggested that the gardeners' representatives have not given the best support they could around the Council table to the useful project under notice, but we understand that neither they nor their distinguished associates have been by any means regular attendants at the Committee meetings at which the business pertaining to the Conference has been conducted, though we think members of the Council have an inherent right to attend all committees, and their presence is naturally encouraging, whilst it indicates their earnestness in the work in hand. It is not given to all men to have the broad sympathies of the Secretary of the Society, who gives his strong support to everything that is promulgated under its auspices, and who works assiduously in its interests, but something seems to be expected that is not forthcoming from other members of the directing body in giving, not passive sanction, but active support to whatever may be under consideration by special committees. The Vegetable Conference Committee is undoubtedly fortunate in its Chairman, who admirably exemplifies the force of the dictum that the busiest men have the most time, and we hear he has been well supported by his coadjutors; and during his absence from London over the next few weeks his excellent deputy, Mr. Shirley Hibberd, will, it is safe to say, be equally supported in doing all that can be done in making the Conference worthy of the Society, of the historic garden in which it will be held, and of the cultural and critical skill of British gardeners.

There can, we think, be no question, generally speaking, for there are necessarily a few exceptions, that the vegetable supply, as represented by the greatest variety of the best quality in season, is the most important part of the gardener's duties; and that being so, he should as far as possible become acquainted with the different varieties, "strains," and selections. It may be expected that the seedsmen will take care that their specialties will be represented at Chiswick on September 24th, but that is not enough to make the event satisfying, and private gardeners should contribute samples of what they consider good, not for the purpose of winning prizes, but for comparison, the determination of nomenclature, and for educational purposes generally. It will be creditable to share in such work with such a worthy object in view, and no one can associate himself with it and be the worse for the effort. Few can do so without gaining knowledge, and none without imparting it to others. That alone will induce gardeners to co-operate, for one of the brightest and most prominent traits in the character of "brothers of the spade, the knife, and the pen," is their readiness to help each other in the vocation in which they are engaged.

The display of vegetables will not be competitive, but representative. The schedule is before us as we write, and with the object of inducing gardeners who may be desirous of co-operating to send to Mr. Barron for a copy we briefly indicate its scope. It is divided into six sections, and as it is right to give credit where credit is due, the plan was adopted on the proposition of Mr. Hibberd:—**A**, Green vegetables, including Cabbage, Savoy, Cauliflowers or Broccoli, Borecoles or Kales, Brussels Sprouts, Globe Artichokes, and Spinach. **B**, Fruits or Pulse:—Vegetable Marrows or Gourds, Cucumbers, Tomatoes, Beans, Peas, Capsicums or Chilies, and Egg Plants or Aubergines. **C**, Tubers and Bulbs:—Potatoes, Jerusalem Artichokes, Leeks, Onions, Shallots, Garlic, Turnips, and Kohl Rabi. **D**, Tap-roots:—Beet, Carrots, Parsnips, Horseradish, Stachys tuberosa, Salsify, and Scorzonera. **E**, Saladings:—Endives, Lettuces (Cos and Cabbage), Celery, Celeriac, and saladings. **F**, Miscellaneous:—Natural vegetable garnishings for kitchen use, Cardoons, Leaf Beets, seed pods, small bulbs, &c., for

pickling and other culinary purposes; Parsley, flavouring herbs, Mushrooms, and other edible fungi, new vegetables, and vegetables comparatively unknown. The enumeration indicates the comprehensiveness as well as the simplicity of the scheme, and as only small quantities of each are asked for—an ordinary dish, as stipulated—the greatest number can contribute of what they have in presentable condition at the time.

There is no appeal to mercenary motives in this Conference. It is based on altogether higher ground than that, and there are plenty of men in the gardening ranks who, though not rich in this world's goods, will respond from a feeling of loyalty to the craft they adorn; but though no prizes are offered, "certificates of merit will be awarded in each class to well-grown examples as standards of excellence," and these will be worth possessing.

Yet, though no prizes are offered, we should like to see what we do not observe in the schedule—namely, a certain number of medals placed at the disposal of the examiners for complete collections of vegetables as representing the current supply in the gardens in charge of contributors of such collections. This would not be competitive, any more than collections of plants at the Drill Hall are, and for which medals are recommended at every fortnightly meeting. Surely gardeners who give evidence of their foresight and cultural skill in the manner suggested are at least as worthy of receiving such honours as are growers of plants for sale, who in other ways derive profit from their exhibits, or they would not, perhaps, be so freely displayed. This idea is respectfully commended to the consideration of the Council of the Royal Horticultural Society, and if they cannot, on reflection, see anything in it, we suspect the gardeners of England can, and in that term is included the equally good men of Scotland, Ireland, and Wales. Why should growers of plants and flowers who admittedly, and properly in the way of business, exhibit at the Drill Hall for gain be honoured with medals for benefiting themselves while gardeners who contribute useful produce to the Chiswick conferences for the benefit of others have none? That they will contribute there is no doubt, and all the more honour to them for their disinterested efforts; but so long as the distinction continues it will be an anomaly, and anomalies will become increasingly unpopular unless we misinterpret the signs of the times.

We had written thus far when a digest of the proceedings came to hand, and that portion of it which is not embodied in the foregoing remarks is appended:—

"For the selecting of the best types of the several products exhibited committees of experts will be appointed, who will report upon those considered the best adapted for general cultivation both for profit and high quality. The reports will be made public for the general advantage when they have received the imprimatur of the Council. In the conference free discussion will be invited on the proposals made in the several papers to be read. These include the following subjects, to be introduced by the persons named in connection with them:—'Asparagus,' by Mr. Shirley Hibberd; 'Winter Salads,' by Mr. Norman; 'Food of Vegetables,' Mr. J. Wright; 'Improvement of Peas,' by Mr. T. Laxton; 'Improvement of Potatoes,' Mr. A. Dean; 'Vegetable Supply Throughout the Year,' Mr. J. Smith of Mentmore.

"On the first day, September 24th, the proceedings at Chiswick will be followed by a gardeners' dinner at the Cannon Street Hotel, Mr. H. J. Veitch in the chair; on the second day, September 25th, the reports of committees will be presented; on the third day, September 26th, the larger questions of improving the products of the vegetable garden will be discussed. Mr. Harry J. Veitch is appointed Chairman of the Conference, Mr. Shirley Hibberd Vice-Chairman. Schedules and all other particulars are obtainable at the offices of the Royal Horticultural Society, 117, Victoria Street, S.W.; or of Mr. A. F. Barron at the Society's garden, Chiswick."

As we observed last week, now the scope of the Conference is made known, it may possibly be in time for enabling gardeners and

others interested in vegetable products and the proceedings indicated, to make arrangements for visiting the metropolis on the dates above named.

CAMELLIA BUDS FALLING.

THE principal cause of Camellia buds and flowers falling is unripened wood. From the time the wood has lengthened out and the flower buds have commenced forming the treatment of the plants should be gradually changed. A close, warm, moist atmosphere, with shade from the sun, suits them admirably during the season of growth, but must be discontinued by the time the foliage has become firm and leathery. When it is in that condition admit more light, maintain a drier atmosphere, with more air until full ventilation can be given. During spells of dull, damp, sunless weather artificial heat may be employed during the day with ventilation. At night the house should be kept cool. This is not necessary for plants that are assisted to make and complete their growth early in the season, for those subjected to this treatment invariably retain their buds and flowers until they fall in a natural manner. On the other hand, plants that make their growth under almost natural treatment, except that they are shaded from the sun, and often unduly so, frequently cast their buds. If the autumn prove unfavourable the wood has very little chance of becoming firm and ripe. Devote every attention to plants in this condition, for chances of success are remote unless the wood is thoroughly brown to the base of the flower buds before they are half developed. The best means of avoiding the buds falling through unripened wood is to push the plants into growth as rapidly as possible after they have flowered, and not allow them to move forward under natural conditions. More light should also be admitted to plants that do not flower before April and May than is necessary for those that flower earlier and have all the best months of the year in which to mature their wood. The fact must not be lost sight of, that it is easier and safer to force the Camellia during the season of growth than after the buds have formed.

It is a common practice in gardens, especially with those who have limited glass structures at their command, to turn plants outside during the summer months. Many evils result from such treatment unless the utmost care is exercised. A light but shady position is generally selected for these plants outside. We have seen them arranged under trees, and no more injudicious treatment can be followed. Those who have plants in shady positions would act wisely in removing them at once to an open sunny spot, where they can be shaded only from rough winds. If the plants will bear full or nearly full exposure under glass the force of the sun proves beneficial, not the reverse, outside. A sunny spot is necessary to ripen the wood sufficiently to enable the plants to retain their buds and flowers. All that is needed when the plants are exposed to the sun is the protection of their pots on the sunny side, either by plunging them, or using old mats or any other material to break the full force of the sun.

Plants that have been outside for some weeks or months are greatly benefited by night dews, and require in consequence the most careful treatment after they are first housed. Special treatment must be given them and the internal atmosphere made to correspond as nearly as possible with what they have enjoyed outside. The higher temperature and drier atmosphere of a glass structure is sure to prove injurious. The change is too sudden, and frequently is sufficient to cause the buds to fall. Keep the house at first as cool as possible, moist, and the plants liberally syringed; in fact, any change in their treatment should be of the most gradual description. Too much care in this matter cannot well be exercised. On no account discontinue syringing suddenly, or raise the temperature, and discontinue the supply of moisture in the atmosphere during the swelling of the buds.

Strong stimulants in any stage of growth do more harm than good, and if practised after the buds have set they are very liable to fall. Overfeeding must be avoided. Weak stimulants prove beneficial, and are most needed by the plants during the time the flower buds are swelling. Do not discontinue the application of stimulants suddenly, but give them it weaker until it can be omitted without the least fear of the plants suffering.

Bud-falling is sometimes due to the poverty of the soil in which the plants are grown. Feeding in such cases must be practised, but it is infinitely better to supply the plants with a quantity of fresh soil than to leave them dependant on liquid or artificial manures. If the plants are grown in pots or tubs this difficulty can readily be overcome by placing them into others of a larger size or giving rich top-dressings annually. If planted out dig round them and place fibry loam, in which a few bones have been mixed, close to the roots, so that they will have an opportunity of

entering it at once. These operations are best performed directly after flowering.

Dryness at the root during the period of bud development is a certain cause of failure. Whether grown in pots or borders the soil should in no stage of growth become destitute of moisture. On the other hand, they must not be overwatered. One evil is as bad as the other. Even if the borders are well drained it is possible to overwater them. Sour saturated soil will result in the buds falling as quickly as dryness. Plants that are thickly infested with scale generally cast their buds or flowers. These, however, can be destroyed by the aid of petroleum and water, but it must not be used too strong. Strong insecticides must be strictly avoided from the time the buds commence swelling. Three ounces of the oil to four gallons of water will destroy scale and do no harm to the buds. It is much wiser to give the plants three or four applications rather weak than one very strong.

The Camellia during the swelling of its buds resents dry fire heat and undue forcing, which are certain to result fatally. When it is found necessary to employ fire heat either to ripen the wood or to induce the flowers to open it should be applied very gently at first and gradually increased. The syringe should also be freely used.—CULTIVATOR.

FRUIT TREES AND APHIDES IN 1889.

My own observations made this summer in many gardens and orchards, coupled with the statements of friends resident in a variety of localities, lead me to think that the injuries caused by aphides to our more important fruit trees equal, if they do not exceed, the mischief done by caterpillars. Caterpillars, as a rule, confine themselves to the consumption of leaves or leaf buds; now and then they may eat immature fruit or gnaw young wood, but this rarely happens. Aphides, spreading themselves over trees in multitudes, do a greater amount of damage from the persistency of the drainage they make upon the sap—the life blood of the tree, also they clog up and obstruct the breathing apparatus by the secretion popularly called honeydew. Nobody, I think, doubts now that caterpillars, and some other insects feeding similarly, do visit trees and plants that are quite healthy, but there are still those who consider that certain species of smaller size, such as “scale,” thrips, and aphids, attack chiefly, if not solely, those that are in a weakly or unhealthy condition. As I have previously remarked, two things were in favour of an extensive aphid visitation this year—a lack of vitality or vigour in our fruit trees, attributable to the ungenial season of 1888, and the dryness of the early spring of 1889, which proved very favourable to the rapid increase of the aphid tribe.

Another circumstance, perhaps, which may have led the aphides to seek an abiding place in our fruit trees sooner than is their wont was the backwardness of the season, which retarded the growth of a number of the wild plants, upon which several of our garden species reside during the spring. In consequence of this, I presume, colonies of aphides arrived on fruit trees, Beans, Cabbages, and other garden plants before the period of the first general migration—viz., May. An extensive migration did occur then this year, on some days presenting those peculiar atmospheric conditions which make people say “there is a blight in the air.” True enough, for aphides travel from plant to plant within a limited range—not only so, they at such times go several miles, feeble on the wing as they seem to be. Since last May I have noticed other and partial migrations, indicating much activity amongst them, hence 1889 must stand out prominently as an aphid year. There will, of course, be a second general migration about September. I believe some of the special insect foes of aphides have this year been less numerous than usual, as for instance the seven-spotted ladybird (*Coccinella septem-punctata*). This large ladybird is one that follows in its migrations, and, both as grub and as beetle, feeds upon the insects in orchards, clearing off quantities, since it can if so inclined kill thirty or forty of them without a pause. Then there are a host of minute flies in the genus *Aphidius*; the females of these deposit their eggs on the bodies of aphides, and the grubs gradually devour them. But the aphides have unfortunately a tiny parasite, which destroys many of them, and which is therefore a friend of the aphides. It is very possible this parasite has been plentiful this season, lessening in consequence the useful operations of the aphid destroyer. Some difficulty in distinguishing the species of aphides is due to the fact that they are so unlike at times in their winged and wingless forms, and besides that the wingless females of the early months are occasionally very different from those of the autumn broods. There could be no doubt, however, as to the abundance of the Cherry aphid (*Myzus Cerasi*), found also on the Plum, and to which the popular epithet “dolphin” seems to apply, from the resemblance this species bears

to the black “collier” or “dolphin” which visits our Beans. The Cherry aphid is one of the first species to make itself conspicuous, attacking the buds and young shoots. Whether it does invariably quit the Cherry at some migration period I cannot say; very likely it is the case—if so, it doubtless infests subsequently another tree or plant; for migration, as I have stated, generally implies not only change of place but change of diet. This too familiar aphid is black and smooth, only the last brood of the season being brown or yellowish brown. Then the profusion in which *Aphis Pruni* appeared—not merely on Plum, but on Pear and Apple as well—is beyond all question, and it is still too common. This species is always sheltered by a mealy powder, which they exude from their bodies; these are oval and attenuated. Though in colour this aphid varies from yellowish green to pale brown, the green is so far predominant that it is commonly styled the “green fly.” In their winged state the females have the body spotted with black; the head, antennæ, and thorax are also black, and the wings rounded, and of such a breadth that they can fly fairly well. I find positive evidence that this species infests some years both the Chrysanthemum and the China Aster. The latter plant, should the attack be neglected, is killed by the enemy, which, forming a dense crust round the base of the flower stalk, disfigures, and then turns it black.

Myzus Persicæ, an aphid which prefers the Peach and Nectarine, in some few districts showed itself upon the Apple. It is while young of a rosy hue; this is due to minute globules of oil under the skin. The legs and head are green; in the winged form the colour varies from greenish brown to black. But the chief enemy of our Apples was *Aphis Mali*, appearing also to a small extent on the Pear. One curious circumstance in the history of this aphid is the first brood (which have been called “queens” of the family) are larger than all the later ones, grey and mottled with green. Subsequently the broods are yellow, bright green, reddish, or brown, changes often depending on their moults; but they are usually powdered with white mealy particles, like *Aphis Pruni*. When winged they most appear in black and green. As many times been detected in the crevices of the bark, there is not a doubt the species winters on the trees, hence the advantage of washes that may either remove these, or so impregnate the bark that the young aphides are killed before they can crawl to the spring buds. This was the species which, in some orchards, did so much damage to trees which had been previously exhausted by a visitation of caterpillars. The Hop aphid, or a variety nearly resembling it, called *Phorodon Malahab*, occurred in Plum and Apple in May, but not, so far as I am aware, in unusual numbers. This is a small aphid of green hue, body rather transparent and frequently glossy; when winged it is spotted with black. When summer has fully arrived this species will generally be found to have quitted the fruit trees. The well-known woolly aphid, questionably called American blight, or *Schizoneura lanigera*, has not been particularly complained of this season, and owing to the better management of our orchards it is a pest which will probably decrease.

Many readers will have noticed on some of the sunny days we have had lately that there are largish grey flies hovering at about the level of 4 or 5 feet from the ground, now and then rising higher, all the while making a sonorous hum. They are flies of the *Syrphus* group, and busy now in depositing eggs, larvae hatched from which will prove by-and-by to be most assiduous devourers of aphides. These larvae or grubs are footless, leech-like in form, and advance along the leaves by the aid of tiny hooklets. Though blind, though show no difficulty in seizing their prey, of which they only suck the juices, and toss away the carcasses. Some of the aphides are carried off by certain species of wild bees, which construct their nests in banks or hollowed stems, and then store them with these insects to supply the young with food. It may be regarded as one reason amongst others why ants should be discouraged in gardens, that they act a friendly part towards aphides rather than a hostile one, but it is doubtful whether, as some naturalists consider, they do at all times collect eggs of the root-infesting aphides in autumn, and distribute these the next season in spots suitable for their growth.—ENTOMOLOGIST.

CARNATION EXHIBITIONS—OLD AND NEW.

ONE of the most interesting incidents of the recent meeting of the Carnation and Picotee Union at Oxford was the statement made by Mr. E. S. Dodwell at the luncheon, that it was sixty-one years ago when he saw for the first time an exhibition of Carnations and Picotees. He said that he witnessed the sight of some fourteen or fifteen old gentlemen sitting round a table on which was placed from thirty to forty blooms. This was going back to 1828. It would appear that in those days there were classes for

single blooms only, and the varieties in cultivation being no doubt somewhat limited in number, but few flowers were staged for competition. Coming down twenty-five years later, the "Midland Florist" for 1847 gives a report of a Carnation Show held at Derby, and the leading class was for eleven blooms, consisting of Carnations and Picotees both, the veteran grower Mr. E. S. Dodwell having been placed first. The scarlet bizarre shown in this stand was Easom's Admiral Curzon. This remarkably fine variety, still almost unsurpassed for brilliancy of colour when seen in its best form, was rightly regarded at the time as "one of those large leaps in advance which seem to defy all efforts to surpass." That this particular variety should be cultivated for forty-five years after being sent out, is one of the highest testimonies which can be borne to its excellence. It was shown in fine condition at Oxford, and will be grown for years to come, though such modern flowers as Arthur Medhurst, Fred, George, Robert Lord, and Robert Houlgrave have become formidable rivals to it. The latter is regarded as surpassing it in brilliancy of colour, and it is probably a seedling from it.

Some other old flowers that still find a place in collections and occasionally on the exhibition table are S.B. Ely's Sir Joseph Paxton, sent out in 1851, one of the latest productions of a successful raiser; C.B. Hine's Black Diamond, which first bloomed in 1848; C.B. Ely's Lord Milton, sent out in 1836, and though grown for over half a century is yet termed a good grower; P.P.B. Sarah Payne (Ward), sent out in 1847, and respecting which Mr. Dodwell states that "in its way it will never be surpassed," this was very finely shown at Oxford; P.F. Mayor of Nottingham (Taylor), was also shown in good character of Oxford, has been in cultivation thirty years; P.F. Premier is now but little grown, but it was raised at Derby by Mr. Dodwell's old gardener Will Wood in 1837, and is still to be found in collections. Another very old P.F. is Squire Meynell (Brabbin), which first bloomed in the neighbourhood of Burton-on-Trent in 1831 or 1832; in its best days it was indeed a grand variety, and even yet will reward the patient cultivator with glorious flowers; S.F. Sportsman (Hedderley) originated as far back as 1855 as a sport from S.B. Admiral Curzon, and maintaining its character is still exhibited in very fine condition. Among the rose flakes shown at Oxford was Sybil (Holmes) a very charming Carnation, sent out in 1873, and like most of the R.F.'s early in blooming.

Now, seeing that Mr. Dodwell puts the ordinary life of a Carnation at from twelve to fifteen years at most, it is remarkable that the foregoing flowers should have remained in cultivation so long, like some Auriculas that yet hold their own after being leading varieties for years, and the fact that they are still grown serves to show that the cultivation of named varieties of Carnations by florists does not impair their constitutional vigour as is sometimes assumed. The cultivated Carnations are among the hardiest of plants, and will bear a great deal of exposure during the winter. I think if anyone has doubts upon this point, and upon the wisdom of coddling the Carnation, as it is sometimes inaccurately termed, and will go among the florists and study their ways and methods of working, they will come to heartily sympathise with them. The leading spirits of the Carnation and Picotee Union repudiate with emphasis what once were undoubtedly the hard and fast lines of an older generation of florists. The late Rev. George Jeans forty years ago pulverised once and for all future time previous ignorant dogmas, though he did not, and probably no mortal ever will, abolish a succession of ignorant men.

Our newer exhibitions—those in London, Oxford, and Manchester—are doing much in the direction of giving impetus to Carnation culture; but in the country the culture of this flower for exhibition purposes appears to be fast dying out. I have seen several shows of late where prizes are offered for Carnations and Picotees, only to find the most sorry flowers staged, and with a view of giving encouragement to their culture judges are sometimes constrained to give prizes to flowers of inferior quality. It is not that they lack the assistance of the dresser, but the blooms are small, the grounds impure, the beading to the Picotees irregular and ragged, and the petals of the Carnations blurred and partly run. We hear so much in the present day as to the popularity of the Carnation and the extent to which it is grown, that it is matter for wonder better flowers—blooms more worthy of the name of Carnations—are not seen at country shows.—R. DEAN.

TREATMENT OF SOILS AND MANURES.

To find a subject that is not thrashed out by the numerous correspondents to your valuable Journal is no easy task, but I think I see an opening for a few remarks on the treatment of soils and manures—a twin question of considerable importance. I do not feel equal to the work of giving instructions to the scientific, yet

there are many gardeners who are not scientific to whom what I may be able to communicate may not be unacceptable.

I will first ask why it is that as good vegetables are not grown so well in gardens generally as by the few who pride themselves in carrying off the chief prizes at the various shows? There are many difficulties that beset the efforts of the gardeners. One is a lack of the necessary assistance to work the ground properly and to give the requisite time to the vegetables; other details are insufficient manure and gardens overgrown with trees. Unless a head gardener has sufficient experienced helpers to carry out his instructions everything cannot be made a speciality of. I do not care how experienced he is, some things will go wrong then; yet everything to which he is able to personally attend shows the touch of the master hand. Some men concentrate their energies in growing good vegetables, some good Grapes, others good Chrysanthemums, and could the all-round gardener take the lead in every operation everything would be satisfactory, uncontrollable obstacles permitting, except where the cook comes in.

I shall prescribe two courses of procedure, and recommend the adoption of both where practicable, the latter where help is short. The ground that is cleared of Potatoes and other crops should be manured well and dug at once. The advantage of this is it clears the earth of weeds and clears the yard of manure. Oxidised soil is turned in, the unoxidised is exposed to the action of the air, and while other work is being done this dry ground is helping the gardener; all the more important constituents are stored up, the heavier ones are washed down into the soil below, and the volatile either remain where placed or evaporate into the soil above, and all to unite with any of elements present for which they have the greatest affinity, or practically the manufactory of vegetable food is taking place naturally.

As the opportunity offered itself I would take each piece of ground in rotation, judging by the condition of the subsoil whether I would trench it or only bastard trench. In the former case I should spread the manure on the top spit turned in, and in the latter dig the manure into the bottom of the trench, as required for deep-rooting plants; but I think all ground ought to be trenched every year. When applying manure in the first case it should only be used when well decayed and in a semi-dry state. There is ten times more nitrogen in manure that has been properly prepared than when neglected, and when decayed it is better distributed in the soil, and not left in large lumps, which are of small benefit, and in the way when the second digging is being done. The early clearing of the yard of manure is important, for if left long exposed most of the more valuable elements escape, and removing such manure to the land is like taking your purse to the bank with no money in it. How many think of this? The hard work of wheeling manure is performed without a thought of its contents. The only practical advantage artificial manure has over natural is that nitrogen is retained in the former. The nitric acid formed from artificial manure unites with the bases in the soil and forms nitrates of soda, magnesia, potash, &c.; therefore why not prepare or preserve our own carbonic acid and nitric acids, letting Nature manufacture our carbonates, chlorates, nitrates, sulphates, and phosphates?

Carbonic acid is abundant in all manures from stables and cowsheds, and is also deposited on the surface of the soil as carbonic dioxide, which is taken in direct by the plant; thus we may have plenty of nitrogen and carbon present in our manures. Now we want sulphur. Sulphuric acid abounds in most soils, is found in plants, and calcic sulphate (gypsum) is only sulphuric acid in combination with chalk. Phosphorus is plentiful in farm or stable manures, bones, blood, and in the ashes of plants, and more or less in all soils, therefore we have plenty of phosphoric acid to unite with the oxides of calcium (lime) to form phosphates. Calcium can be applied in the form of a good dressing of chalk or lime. If chalk is applied it also gives oxygen and carbon. If lime is applied calcium and oxygen is the result. Two more important organic elements are oxygen and hydrogen. Oxygen enters more or less into every one of the above compounds—is supplied by water and from the atmosphere, therefore we have an unlimited supply. The same with hydrogen. A source of hydrogen is water, of which it forms an important part; it is in combination with all the acids, ammonia, &c.

There are four principal elements essential to plant life—viz., potassium, calcium, magnesium, and iron, and some of these in very small quantities, as is evident by the contents of the ash left after a plant is reduced by fire. Potassium is present in all cultivated soil, and where it is believed to be scarce the best way to procure it is to burn the old refuse heaps and apply the ash. The only means of applying calcium is by dressing the ground with lime or chalk. Magnesium is present in most soils in sufficient quantities for practical purposes. It is the same with iron.

The soil, I may say, consists of three different forms of constituents—the active, the dormant, and the inactive. The active

is already at the service of the plant, the dormant is waiting to be taken up or set at liberty by the action of some of the constituents of the manure applied, or by the action of the oxygen of the air. The inactive is only made active by long cultivation, or by the application of strong manures.

By my first process, above described, endeavour is made to bring these different ingredients into active plant food. The nitrogenous matter in the manure takes up more oxygen and hydrogen and unites with the sodium and forms nitrate of soda, &c.; it is the same with sulphur, phosphorus, and others. When the soil is again dry or trenched, those elements that have not united are brought up to the air to be decomposed and to unite with the fresh ingredients put on the land the second time, and those elements that have been oxidised carried down to unite there with any bases of metals necessary. When I said that if some of the ground is left over till required so much the better, I had in my mind that if the fresh manure dug in was not washed out straw, a constant supply of carbonic acid would be given off for the plant to use at once, the soil would be full of oxygen and nitrogen, and finally the soil would be more porous for the air to penetrate. We all know what progress plants make when the soil is disturbed amongst them.

I am convinced on the point of manures that they are useless to a certain extent unless proper means are used to preserve the vegetable-producing qualities in them. No garden should be without a good covered shed or yard for cows or covered-in pigsty. It should be large enough for all the manure as it is made by the animals to be heaped, over this heap cesspool water should be poured in sufficient quantity to moisten it through, and all garden and stable refuse thrown into the rest of the sty and kept damp enough, so that it will decay, and in its turn be thrown on the heap.

I have steered as clear as possible from technical nomenclature, so that my remarks may be intelligible to those not versed in chemistry. That I could have written an article perhaps more taking to some by giving a long account of artificial manures and their effects I doubt not, but that is not my object. I want to prove that all the advantages do not lie on the side of such manures, and that as good produce can be grown without them as with them. I will do my best to improve on this in a future communication.—G. A. BISHOP, *Gardener to W. Howard, Esq., The Grove, Teddington.*

SAFFRON.

THE following additional notes on the Saffron, gleaned from various sources, may be of interest to the readers of the Journal:—

It is highly probable that it was at one time cultivated pretty widely in the southern English countries, as in addition to the town of Saffron Walden receiving its name from its connection with Saffron culture, Saffron Hill in London, formerly part of the Bishop of Ely's Holborn gardens, was also named on account of being celebrated for its growth; and Mr. Thiselton Dyer in his "Folk Lore of Plants" (p. 139) says, "In Devonshire it may be noted that this plant is used to denote anything of value, and it is related of a farmer near Exeter who, when praising a certain farm, remarked, "'Tis a very pretty little place; he'd bet so clear as Saffron." The same author cites the proverb, "You set Saffron and there came up Wolfsbane," as being used regarding actions which produce unexpected and unwished-for results. It is to be regretted that no indication is given as to the locality in which this proverb is current.

It would be interesting to know if it is still grown for trade purposes in England; and Mr. H. G. Adams in "Wonders and Beauties of the Year" says (p. 191) that it is still extensively cultivated at Saffron Walden; but Rev. H. N. Ellacombe, in his valuable work "The Plant Lore and Garden-Craft of Shakespeare," which should be in the hands of all interested in the subject of plant lore, makes no mention of this, stating, however, that "the plant is largely cultivated in many parts of Europe, but the chief centres of cultivation are in the arrondissement of Pittciviers in France and the province of Arragon in Spain, and the chief consumers are the Germans. It has also been largely cultivated in China for a great many years, and the bulbs now imported from China are found to be in many points superior to the European."

The Saffron was at one time largely in use as a medicine, and Mr. T. Thiselton Dyer says, "Our forefathers had, we are told, a great opinion of its cheering powers, and when a man was merry he is said to have 'slept on a bag of Saffron'" ("Leisure Hour," 1879, p. 174). The same author says, "It is used by the Hindoos in nervous cases; Decandolle mentions its action upon the nerves." Joseph Miller, in his "Botanicum Officinale," London, 1722, says, "Saffron is a most noble Cordial, and a Strengthener of the Heart and vital Spirits, resists Putrefaction, and is good in all kinds of malignant and contagious Distempers, in fevers, Small Pox, and Measles." It is also recommended by him for the liver, asthma, consumptions, &c. Culpepper gives practically the same information, and it is impossible to restrain a smile when he says, "It is a herb of the Sun, and under the Lion, and therefore you need not demand a reason why it strengthens the heart so exceedingly. Let not

above ten grains be given at one time, for the sun, which is the fountain of light, may dazzle the eyes and make them blind."

The following extracts from Philip Miller's "Gardeners' Dictionary," 1735, and abstracted by him from a paper presented to the Royal Society by Dr. James Douglas, may be of interest. It is here stated that the Saffron "grows at present most plentifully in Cambridgeshire, and has grown formerly in several other counties of England." The mode of cultivation and preparation, as observed during the years 1723-24-25, and -28, does not appear to differ materially from that given in the Journal on page 133. The grounds were "seldom above 3 acres, or less than one; and in choosing the principal thing they have regard to is, that they be well expos'd, the soil not poor, nor a very stiff clay, but a temperate dry mould, such as commonly lies upon chalk, and is of a hazel colour; tho' if everything else answers, the colour of the mould is pretty much neglected." The number of roots in cultivation must have been very large, as, from Dr. Douglas's calculation, 192,040 would be required to plant an acre.

The price of this dry Saffron, as will be noted from page 133, appears to have varied considerably, and Dr. Douglas, in entering into a detailed calculation of the profit of Saffron growing, gives an average price of 30s. a pound, saying "Since in very plentiful years it is sold at twenty (shillings) and is sometimes worth between three and four Pounds." He calculates an average triennial crop of 26 lbs. of Saffron per acre, and a net profit in three years of £15 13s. per acre, or about £5 4s. yearly. No allowance is made for interest on the original outlay, nor is credit taken for increase of stock.

Much further information on the Saffron will be found in Mr. Ellacombe's book previously referred to.—S. ARNOTT, *Rosedene, Kirkbean, Dumfries, N.B.*

A ROSE FREAK.

A PECULIAR Rose flower was recently sent to us by Mr. J. Jeans, Midsomer Norton, in which the carpels had nearly all been converted



FIG. 22.—A ROSE FREAK.

into buds borne on short stalks, and all appearing likely to expand. Though many peculiar formations in Rose flowers are brought to our notice, some of which have been described and illustrated, the one now represented in fig. 22 is so unusual that it is worth placing on record. The most common form of abnormal growth is that in which the axis extends after the flower is nearly mature, and after growing a few inches produces a second bud at its apex. Examples of this are frequently observed and sent for an opinion as to the cause, but it is difficult to assign what may be termed cultural causes for all the eccentricities of growth remarked in these or other plants. Such are no doubt often

induced by a check in some way, and the subsequent effort of the plant to resume its ordinary style of growth results in strange formations. Mr. Jeans says, in this case, that probably "it was caused by a check, due to the very dry weather we experienced at the end of June and in the beginning of July, and all through which it had no water. The Rose was cut from a very weakly shoot which was nearly completely covered by foliage, so that it did not get much light. Owing to this, I had no opportunity of seeing it expand, as it was not noticed till the day before I sent it you. The tree is a half-standard, about 10 feet away from the vicarage south front, where it has the full glare of the sun all day. It is very free flowering as a rule, but this year is an exception, it having only five flowers altogether. The soil is rather clayey and very poor, as it has not had any manure for three successive seasons."

ALPINE STRAWBERRIES.

THE Strawberry season may be said to be over when the Alpines are coming in plentifully, and on that account alone they have a claim to our attention. And they have other claims. First, the flavour is peculiar—a sort of acidity that is not distasteful but refreshing. Secondly, the birds do not attack them so much as other fruits. Thirdly, they can be depended on for autumn fruiting. I have had plants that began bearing in July producing fine fruit up to Christmas in a mild autumn and winter. Fourthly, a dish of Red or White Alpines set up with their own leaves is for ornament alone a good addition to the dessert.

The best plants are those raised from seed. They are more vigorous, less liable to suffer from drought, are more continuous-bearing, and more to be depended upon for autumn supply. The best plants I ever had were from seed distributed by the Royal Horticultural Society some years ago. Plants from runners are of too weak growth, the fruit after the first picking becoming small, and the runners they produce do not keep up the successional and autumn supply. With some sorts of Alpine Strawberries propagation by runners must be practised, as it is a ready mode and all cannot have seed; besides, in seed-saving the finest and best fruit must be sacrificed; but considering that plants from seed are the best, and bear the finest fruit both in summer and autumn, I strongly recommend this mode of propagation. In sowing seed we do not run the same risk of perpetuating plants which yield but small fruit, or are shy bearers, as we do when taking runners from a bed in which there are various degrees of vigour, size of fruit, and continuance of bearing. The plants propagated by runners seem to become weaker, and for anything I know may sink to an equality with the plants on a hedge bank. By taking the fruit of the most vigorous and most continuous-bearing plants, and sowing, we obtain plants fully equal to the parents. In no case have I known them inferior, for it is not species which run into all sorts of forms and give so many useless ones, though there are at times great results, but the cross-breeds. Not only do Alpine Strawberries come true from seed, but every generation shows a marked improvement in the majority of the offspring, and it is by this progressive improvement that I hope to see the Alpine yielding fruit of the size of such varieties as Black Prince. Autumn production and increased size of fruit from plants raised from seed are not peculiar to the Alpine Strawberry alone, the autumn fruiting Raspberry is influenced in the same way. The seedlings are in most instances finer than the parent, none or few producing inferior fruit.

The Alpine Strawberry succeeds best in soil overlying gravel, limestone, or in those medium-textured loams that are neither heavy nor light, and have an open subsoil from which superfluous water passes away freely. In light open soils the plants succeed with copious waterings in dry weather after they come into flower and during bearing, but in heavy wet soils they do not thrive, at least they do not with me. The plants are apt to go off in winter, and in soils of this kind I have found a raised bed advantageous. It may be formed of any kind of rough material, marking out a space about 8 feet wide, and raising, about a foot high in the centre, a mound of stones or gravel, which is covered with a foot thick of soil. This may consist of two parts loam, neither heavy nor light, enriched with one part of well-rotted manure—old cowdung is best. All round I place bricks on edge, alternately headers and stretchers, and when I have formed a row all round I have cavities which are filled with soil level with the upper sides of the bricks. I then place another row or tier of bricks as before, and so on to the top, or until the bricks from both sides meet in the centre of the mound. It may seem strange to employ bricks for such a purpose, and it may be thought that a raised mound would answer just as well. It does not, however, for the plants cannot be so well watered, the water running away too quickly by the surface, and this is prevented by the brick terraces, and the bricks keep the fruit from damping, as it is apt to do in autumn from the frequent rains. The spaces for the plants formed by the bricks are filled with soil, and one plant is planted in each. The situation should be open, and the ends of the bed ought to be north and south. In such a bed the plants continue bearing until late in autumn. Alpine Auriculas in heavy soils are quite at home in beds of this description, and Parsley thrives where, from the wetness and coldness of the soil, it is not to be had in winter when most wanted. In most soils, however, such contrivances are not required, all that is needed being a good trenching, and manure liberally worked in. A border or bank facing south is not good; the

plants grow best on an east border. On a north border they succeed very well for summer fruiting, and an open spot with the lines running north and south answers very well.

The seed should be sown in February or the beginning of March in a shallow box or pan, well drained, and filled with a compost of two parts loam, and one part leaf mould, covering lightly with fine soil. Place the pan in a gentle heat of from 70° to 75°, keep moist and close until the seedlings are up, then admit air, and keep them near the glass. When large enough to handle prick them off in shallow boxes or pans, employing a light loam enriched with one-third leaf mould. They should stand about an inch apart. Return them to the frame, and keep them close and moist, shading from bright sun for a few days until they recover, and are growing freely. Then give them plenty of air, harden them well off by the beginning of May, and plant them out where they are to fruit.

In planting three lines may be placed in a 4-foot bed at 14 inches apart, and the plants 1 foot from each other in the lines. The outside lines may be 6 inches from the edges, and 1-foot alleys being left, they will be 2 feet from the opposite outside lines of each bed. They may also be planted in lines 18 inches apart, and the plants 1 foot asunder in the lines, putting in two lines, and then allowing 2 feet between these and the next two lines, which space will serve as an alley, affording access to the plants for gathering the fruit and watering. The plants should be lifted carefully, preserving the roots as far as possible, and a good watering given, which should be repeated in dry weather. Before the dog days the intervals between the rows should every year be mulched with short manure or leaf mould. This to a great extent prevents evaporation, furnishes a good material for the runners to root in, and watering carries down a portion of the nourishing matters off the top-dressing to the Strawberry roots. The better the plants are attended to with water the better they will grow. They will not bear much the first year, though in autumn they may afford a tolerably good supply.

For autumn fruiting in the first year the seed ought to be sown at the end of January or beginning of February in heat, the seedlings pricked off when large enough, forwarded in heat, and hardened off by the end of April, when they should be planted out. When the plants commence blooming slates or tiles should be placed between the rows to prevent the dampness of the soil in autumn causing the fruit to decay. There is another advantage in the slates besides preserving the fruit—they become heated by the sun's rays, and the fruit acquire a better flavour. The runners ought to be allowed to grow; they should not be cut off as they appear, for from them we hope for fruit in autumn, as well as from the parent plants.

Instead of raising plants from seed for autumn fruiting, runners of the previous year may be planted in March or the beginning of April, and treated like the seedlings, only they are not put under glass. For summer fruiting and continuing the supply until autumn the runners should be planted out when they become well rooted, and during the year in which they are produced by the parent plants. The trusses of bloom ought to be pinched off as they show on those planted in spring, to furnish late autumn fruit until August, as by allowing them to fruit before they become established we keep them weak, unable to give more than a moiety of autumn fruit.

Having the plants established from seed or runners, in March I cut away all the runners not rooted, point the soil between the lines and around the plants, and give a top-dressing of decayed manure fully an inch thick. When the plants are coming into bloom give a similar top-dressing, and afterwards water copiously in dry weather. There is no necessity for putting down slates in summer or in the second year, for the crop will come in from July to the end of August. When the gatherings are becoming smaller—the plants are very sluggish in August, as most Alpines are from the drought—I take away any runners where too crowded, but not many, and top-dress again, putting the top-dressing neatly round the plants and runners, and give a good soaking of water then and every third day as long as the weather continues dry. I place some slates between the rows by the end of September, destroying some runners which would have fruited no doubt but for the slates; but any loss from this cause is compensated for by the fruit being prevented from decaying. The result the second year is plenty of fruit in July and August, the supply slackening a little at the end of the month; and from September to Christmas if the weather is mild I have fruit—not a dish every day but very often, and might have a dish every day if a sufficient number of plants were grown.

In the third year trim and top-dress in March. Leave a good many runners at that time between the rows, and water well after they come into bloom. They will bear an immense number of fruit—small but the finest of all for preserving, as they keep their form so well, and they are particularly desirable for glasses on the table. It is hard to tell whether the red or white are the more beautiful. After they have borne all the fruit they will in the third year, break up the bed, and plant the ground with anything but Strawberries. To keep up a supply we must sow or plant every year, or not more seldom than every alternate year.

If blight appears it is a sign that the watering is insufficient or runs off by the surface without wetting the soil, as water often does on slopes. In this case holes should be made with an iron bar or rod, and the water given gently. By the exercise of a little patience the soil may thus be made thoroughly moist. The blight or mildew disappears when the soil becomes moist, and a good wetting overhead on the evenings of hot days will wash it off the fruit, and keep the latter from

becoming deformed and from not swelling; indeed, if the mildew be left to itself the blooms turn blind. Plenty of air, water, and a broiling sun are the delight of the Strawberry.

It may not be known that seedlings grown in 6-inch pots placed in a frame early in November, always afforded air, but protected from frost, if removed to a light airy house in December and set on a shelf near the glass, will fruit in winter. Their handsome fruit and pretty foliage render them fine objects for table decoration, the red variety contrasting well with the white. The plants should be grown in partial shade until the end of August, have all blooms picked off, and then be potted in 6-inch pots, layering the first runners just within the rim as a fringe all round. Set the pots in the full sun and water well. The plants may be had in bearing throughout the autumn, and at any time you like by picking off the flowers six weeks before you want them. Remove all runners but those wanted for the fringe.—G. A.



GRAND MOGUL, H.P.

THE note of my friend, "Duckwing," in a recent number of the Journal (p. 108) as to Grand Mogul has remained unanswered. While setting up at the Crystal Palace this year someone came along addressing the world in general and red rosettes in particular, with a similar query which sounded a good deal like a riddle, "What is the difference between Grand Mogul and Jean Souper?" I hope he found a satisfactory answer, but I confess that I was unequal to supplying anything beyond the somewhat trite one, "Give it up, ask me an easier." As to budding, my humble advice would be not to waste valuable time, honest labour, or healthy stocks on either of them.

THE GROWTH OF THE BUD.

There are one or two questions connected with the growth of the Rose bud which might perhaps be elucidated in some measure by discussion, for I, at all events, do not understand them for certain. At the end of the shoot, with the health and strength of which we have taken such pains, comes at last the bud, surrounded by its satellites. These duly removed we want the bud to grow and become big. Sometimes it will, remaining dormant a long time and swelling gradually. Sometimes it will not, but bursts into a premature loose and flabby bloom, though the shoot be of the strongest. This is most clearly seen, I think, in the case of Tea Roses, and especially with Comtesse de Nadaillac and Princess of Wales, which are of somewhat similar habit. With these two varieties I can never tell which shoot is good to produce a strong bud, the longest and strongest sometimes opening prematurely, and small shoots gradually thickening while the bud is dormant and growing. The critical time is when the calyx turns back and a smoothly folded hard cone of petal appears. Sometimes this cone does not alter in appearance for a long time, however hot the weather may be, but simply swells, then it will be a great and probably a good Rose. Sometimes it begins to unfold almost immediately, then it will be comparatively small and probably hollow. Experience shows that neither the strength of the shoot nor the character of the weather is responsible for this different behaviour, and the question is, Why, in such cases, does the one bud swell before opening, and the other fail to do so?

As a possible help to the solution of this conundrum, let us have another. Why are second blooms, even on fresh strong shoots thrown up from the base, so generally inferior to the first? It is a common maxim in the vegetable world that those growths are the best which are made without hindrance. With most plants it is a gardener's great object to grow them along without any check. But the first blooms of our Roses have met with many checks; they have generally been chilled and stopped again and again by cold winds during almost all their growing time, and sometimes have to put up with actual frosts, not to mention all manner of insects which can bite and destroy. The second bloom, on the contrary, which comes on a strong flush shoot, which starts from the base at midsummer or July, has no such check whatever. Constant warm nights, no caterpillars, a thoroughly warmed and tilled soil, no wonder its growth is thicker and taller than that of the shoots which have borne the battle and the breeze of most specimens of our merry month of May. How comes it, then, that the bloom, though fair on some H.P.s, is generally not so good as on the earlier started and weaker-looking shoots? Anna Ollivier is a good example; we know its habit of throwing up much stronger and taller shoots directly the first bloom is over, and that these shoots, as a rule, do not produce blooms so good as the shorter and earlier ones.

Now, then, for a theory, which, however, is not put forward as anything new or original. Are the blooms of the secondary and stronger shoots flabby and poor because the unchecked and persistent flow of sap forces the buds to expand before they have time to grow? If so, here may be also an answer to our first question. The weak shoots of Comtesse de Nadaillac, whose growing dormant buds produce

such fine blooms, may do so because they get just enough sap to make the buds grow, and not enough to force them out too soon, and the strong shoots may get too much and thus be opened prematurely. And again, secondary later shoots produce weaker blooms, because they have not passed through the checking, hardening, delaying days and nights of an English spring. But if all this be true, are we doing wrong in our continued efforts to increase the flow of sap by strong stocks, healthy plants, liquid manure, stirred soil, and every means in our power? I think not, because, as a general rule, and universally perhaps with H.P.s, the strongest shoots of those that start in spring will have the strongest blooms; and the same rule would generally hold good with Teas, except occasionally, as I have said, with Comtesse de Nadaillac, Princess of Wales, and perhaps some others. "Exceptions prove the rule," they say; my second bloom of Teas has this year been better, barring the rain, than the first; but then the past July, when the secondary buds were dormant, has been cooler and less forcing than May or June.

The idea arose in connection with a rosarian of repute, who spoke of bending down even such long and strong shoots as Marie Van Houtte to get the buds under caps to protect them from the rain. "But would not that check the sap?" was my question. "All the better," he replied, "for then the bud would grow," and that answer was the cause of these lucubrations. My Marie Van Houtte buds do grow. I find the strongest shoot does have the biggest blooms, and I can hardly think they would be better by being bent down, though I have not tried it. But the habit of Comtesse de Nadaillac and Princess of Wales has still to be accounted for if the theory given above is rejected (and I find a stiff, straight, perpendicular shoot of these varieties seldom has a perfect bloom). And if it be true what are we to do? There are plenty of ways of checking the sap. Not thinning the side shoots or laterals too severely would do this I suppose. Often when the growth is rapid every bud will push and grow all up the stem, even before the terminal flower bud has thrown back the calyx. Are we wise to check all these side channels, and cram the sap up to the end of the shoot as quick as we can? Then, too, there are ligatures of sorts. What of something in the way of a tourniquet, which would act as a tap, so that we could turn the sap on or off as we liked? But this is somewhat wild. I cannot think, till I am told by someone who knows, that a check of sap is necessary or desirable for anything but secondary shoots (which are perhaps not worth it), and for the mysterious growth of bud occasionally seen in the too good dwarf Teas before mentioned. The questions, therefore, which I wish to put to rosarians are these. Is the comparative poorness of the blooms on strong secondary shoots starting from the base in summer due to a want of hindrance to the too free flow of sap? And is it the same cause or some modification of it which makes the buds of Comtesse de Nadaillac and some others so uncertain in the first stage as to whether they will grow and become big, or flower prematurely?—W. R. RAILLEM.

IRON FOR ROSES.

MR. TONKS says iron is essential in the soil for the production of good Roses. Will he, or any other correspondent, inform me whether oxide of iron (which is very cheap), would be beneficial to the soil and consequent blooms if applied as a surface dressing, or dug in in the autumn or spring, and oblige one whose ambition to excel the whole convocation of rosarians, lay and clerical, has hitherto been—DISAPPOINTED.

SCORCHING IN VINES.

HEAT, as derived from the sun's rays striking suddenly on the glass roof of a horticultural building, causes the rise of the internal temperature in a proportional rapid or slow rate as they proceed in a direct or oblique inclination from their source, which should prove that injury to Vines would be more prevalent during the height of summer, though as a matter of fact it is more so during the spring months; this, of course, being accounted for through the young and tender foliage not being so well adapted to withstand the strain it is sometimes called upon to bear. When the rise of the temperature of the house is rapid, a corresponding rapid evaporation of moisture from all damp surfaces is caused, and this occurring in a structure in which no ventilation is afforded the heavily charged but rarefied air ascends until it comes into contact with the glass roof, which does not absorb heat so readily as the atmosphere, and is therefore considerably colder than the ascending air, the result being that the moisture becomes condensed in the form of dew on the glass; this for a time acts as a screen to the foliage, and protects it from the fierce rays of the sun. In the course of a short time, as the glass absorbs heat and approaches the same temperature as the atmosphere of the house no condensation takes place, and the temperature rapidly rises, and the air escapes between the laps of the glass, taking with it the moisture contained in the house, then such thin textured portions of the plants as contain liquid are forced to yield up their store, with the result that we have before observed—viz., the rupture and subsequent death of those portions.

From this view of the cause of Vines being scorched we might almost think that ventilation is calculated to do more harm than good, inasmuch as it favours the escape of the heated air, consequently promotes evaporation of the moisture contained in the house, and therefore predisposes scorching. To a certain extent we may perhaps be right, but we must not overlook the fact that in ventilation afforded at

the proper time, and ventilation given after the house has become highly heated, there is a vast divergency of power that may cause good or bad effect.

Granted that ventilation in some form or other is indispensable to a healthy condition of the plants raised in glass structures, it should follow that it is the faulty manipulation of the ventilators that causes the mischief rather than the non-observance of the principles that cause the adoption of such proceedings, especially if the views of such as advocate a close system of cultivation is taken into account, for if, as they affirm, scorching is an evil almost unknown to such as thoroughly understand the practice of non-ventilation, the question turns upon the importance of a complete knowledge of the reason why we ventilate and why we do not. Some cultivators assume that the chief motive should be with the object of admitting fresh air, and on every possible occasion when they deem it favourable proceed to ventilate their fruit or plant houses with a zeal that should assure astounding results if that alone were the chief factor of success. I consider it waste of energy to strive to attain such a fine adjustment of temperatures. If once those in charge of glass houses can be induced to comprehend the principle on which ventilation is practised, there remains but little necessity to endeavour to instil the minute details. If a young beginner can once grasp the ideas that an abrupt change in plant life, whether it be in respect to air, earth, or water, little remains except occasional unavoidable accidents and such like contingencies to insure the successful and satisfactory issue to such a practitioner's efforts.

Now the question presented is, Why do the phenomena of scorching occur in properly ventilated houses and seldom or never in those where no ventilation is afforded? This no doubt is somewhat puzzling to such as endeavour to impress on the uninitiated the disastrous effects in neglecting to ventilate their houses at the prescribed proper moment. I have never been fortunate enough to obtain the precise views of such a one on the state he would expect the occupants of a house to present after a spell of non-ventilation. When shading is practised either by blinds or by means of lime or colour washes a twofold end is gained—the fierce direct rays of the sun are intercepted and broken up, which reduces their heating power, and at the same time obviates the necessity of opening the ventilators to prevent the temperature being raised too high; this again favours the maintenance of a more steady and genial atmosphere, and in such atmosphere where humidity is preserved to be plainly perceptible to the senses, no scorching can occur if the diagnosis is correct that I have given previously. So that it appears that scorching is not a question of ventilating, but of the adequate supply of moisture in the air within the structure, and I might also add to the roots of plants as well. Some severe cases of leaf-scorching that have come under my notice have been plainly attributable to this cause, and when such is the origin of the mischief shading and close ventilation, with free disposition of moisture atmospherically will only temporarily allay the evil, as it cannot fail to occur on the first occasion that the plant is subjected to anything approaching an evaporating influence.

Another phase of the injury that owes its origin to defective glass is sometimes met, but not frequently, as the cause is generally promptly removed when it is observed that plants placed in a certain position in the house are invariably injured if allowed to remain there for any length of time. This is undoubtedly caused by the globular unevenness of the glass focussing the rays of the sun, so that they blaze with concentrated energy upon certain parts of the plants, and literally burn them. Much the same effect is produced—generally during the early part of the season—upon the common Laurel, Holly, and other smooth surfaced leaves. Small circular holes being produced in this case, resulting from moisture being deposited on them by a slight shower that is not sufficient to moisten the whole leaf, this causes the deposit to assume a tiny globular form, which acting as a lens when the sun again shines cause the death of that portion of the leaf. It is, I imagine, from this fact that the popular idea has gained ground that watering plants over the foliage during bright sunshine will cause disastrous results.—M. COOMBE.

THE ROYAL HORTICULTURAL SOCIETY'S JOURNAL.

THE second part of vol. xi. of the above Society's Journal, edited by D. Morris, Esq., M.A., and the Rev. W. Wilks, M.A., Treasurer and Secretary respectively, has just been issued from the offices, 117, Victoria Street, S.W., and though it has been long expected the important character of its contents will compensate in a great measure for the unavoidable delay that has occurred. The part contains 138 pages, and includes the papers read with the consequent discussion at the meetings of the Society from March 12th to June 11th of the present year; but does not comprise any reference to the meetings of the Fruit, Floral, and Scientific Committees during the same period, this probably being reserved for the next issue. It is published at the price of 5s. to non-Fellows, which in these days of cheap literature might be regarded as exorbitant by any purchaser who had not previously seen the work. A brief glance at the leading papers will show, however, that they are interesting alike to amateur and professional horticulturists.

SAXIFRAGES.

The first paper is one by Mr. J. G. Baker, entitled "Notes on Saxifrages," in which he deals with their geographical distribution and

the principal characters of the genus. Referring to garden Saxifrages he says :—

"Out of the 180 species we have just about half in cultivation. There are a great many names in the garden catalogues of which botany knows nothing. As this paper will be printed in the proceedings of our Society I thought the best thing I could do would be to give a classified catalogue of the cultivated species, with their names and native countries. I have followed Engler's classification and adopted his numbers, so that the blanks will show roughly where the non-cultivated species fall. The great bulk of the cultivated species come under six out of the sixteen groups. Three out of these six have the cotyledons tipped and the leaves more or less bordered with glands, and the three others are without them. Of the non-foveolate groups *Dactyloides* includes twenty-one species. These are marked by their mossy habit, copious trailing leafy shoots, palmately divided leaves, and few corymbose flowers, with petals usually large and white. The best known species of this group are *hypnoides*, *ceratophylla*, and *caespitosa*, with its numerous varieties. Two fine large flowered types of recent introduction are *Camposii* and *Maweania*. The second non-foveolate group is *Robertsonia*, which only includes three species, *umbrosa*, *Geum*, and *cuneifolia*. The third is *Bergenia* (called *Megasea* by Haworth), which is confined to the Western Himalayas and mountains of Siberia, and is very clearly separated from all the other groups by its red unspotted petals, thick rootstocks, and large undivided leaves of firm texture." Of the foveolate groups the best known is *Euaizoonia* (or crustaceous Saxifrages), in which the densely rosulate leaves are margined with numerous chalk-secreting pores, and the numerous flowers form ample erect panicles. The most widely spread species of this group is *S. Aizoon*. For purposes of cultivation, *Cotyledon*, *florulenta*, *longifolia*, and *lingulata* are the finest. Several of the species have a restricted range amongst the mountains of Southern Europe. I should like to know how far these need carbonate of lime for their successful cultivation. In *Kabschia*, under which eighteen cultivated species fall (of which we may take *S. Burseriana* as a type), the leaf-glands are much fewer and less conspicuous, the flowers fewer, and the leafy shoots last for some years, and are thickly beset down below the fresh leaves with the relics of the old ones. In *Porphyron*, which includes *oppositifolia* and three other high alpine species, the leaves are opposite and decussate, and the red or purple flowers solitary on short leafy peduncles. In the small Chinese and Japanese group *Diptera* there are long creeping stolons, and the spotted petals are very unequal in size. The Californian *S. peltata* has large peltate leaves like that of a *Rhubarb* or *Gunnera*. I do not think there are many species not yet introduced that are worth much from a garden point of view. Out of the thirty-five Himalayan species, which are mostly endemic, twenty-six have not yet been introduced."

The paper is concluded with a list of species (166) and hybrids with their parentage (14).

Mr. George Paul followed with a paper on the cultivation of Saxifrages, in which some useful practical hints were condensed into small compass. Noting the Encrusted species he remarked :—

"One of the most interesting sections of this family is that known as the Encrusted Saxifrages. In this the leaves are of a tufted habit, jewelled, so to speak, with silvery dots (of carbonate of lime), so that even when not in flower they are beautiful objects. I have found these thrive best under culture, either in pots placed in a sunny open place, or planted on rocky buttresses standing out from the face of the rock-work. These buttresses may be formed of rocky *débris* of limestone or granite (the plants appear to thrive equally well on either), but it is necessary that the roots should be able to penetrate to a good depth. Others may be planted in situations fully exposed to the sun on the sides or upper surfaces amongst broken stones; whilst the beautiful *S. longifolia* of the Pyrenees prefers to be planted vertically between stones, and for choice looking towards the west. Other sorts in this section, such as *S. Aizoon* and varieties, *S. lanfoscana*, *S. pyramidalis*, will thrive anywhere on rocky walls; whilst a special few, such as the beautiful *S. Burseriana* and *S. caesia*, always impatient of moisture, need the highest and best drained situations that can be given them. Once established in such situations, plants of this section form dense tufts of silvery foliage often from 6 inches to 1 foot in diameter. They bloom abundantly during the months of April, May, and June, the flowers being mostly white, but sometimes, as in *S. Macnabiana*, with carmine or red spots on the petals. Success in the culture of these plants depends on the use of gritty or sandy soil, on good drainage, an open sunny aspect, and plenty of water in summer whilst the plants are in a growing state."

Cultural notes on the principal groups and species of *Saxifraga* are also contributed by Mr. G. Reuthe of Tottenham.

HYACINTHS.

Three papers are devoted to Hyacinths. One by Heer A. E. Baarnart, Haarlem entitled, "Historical Notes on Dutch Hyacinths" reviews the earlier history of those plants briefly but thoroughly. A second paper by Heer J. H. Kersten, Haarlem, discusses the cultivation of Hyacinths in Holland, in which we are informed that 570 English acres are occupied with these plants in Holland, and at least 5000 men are engaged in the trade. It is also said that :—

"The flowers, having no value in Holland, are often sent to the English market. This, however, is considered so injurious to the trade

in bulbs, that measures are being taken to prevent it. The fact that at last the secret has been found to extract a perfume from Hyacinth flowers may add not a little to remove this grievance."

"The Hyacinth, from an English Point of View" is the title of Mr. J. Douglas's paper, in which are incorporated the chief facts derived from the author's long experience as a cultivator and exhibitor. The writer observes:—

"I have cultivated the Hyacinth successfully as an exhibition plant in pots for more than a quarter of a century, and may therefore claim the right to be a teacher of those who are but commencing their culture. The first point to attend to is the purchase of the bulbs; and if the best results are expected, full-grown bulbs must be purchased in the best varieties. Those intended to flower early should be planted in their pots about the middle of September, or even earlier. Those that will flower in March, a month later. They should be planted in a rich compound of good loam two parts, one part decayed cow manure, one part leaf mould, and one of river sand. This mixture should be laid up in a heap about the beginning of August, in order that the ingredients may be well incorporated before the material is used. I use the ordinary form of pot, 5 and 6 inches diameter inside measure. See that the pots are clean, and that clean potsberds are placed over the holes for drainage; some rough turf should be placed over the drainage to prevent the finer particles of soil from mixing with it, and thus choking the outlet of water. It is well known that a Hyacinth will grow and flower well in water only; but when it is planted in garden mould too much water, or a stoppage of the outlet for the superfluous water, will destroy the roots and seriously cripple the growth of the plant."

DAFFODILS.

An exhaustive paper on "The Narcissus," by Mr. F. W. Burbidge, M.A., occupies twenty-three pages of the journal, and gives an interesting review of the leading characters of the genus, structure, colour, distribution, species, hybrids, names, seedlings, and culture, showing special sections devoted to their consideration. Double varieties are also discussed, and a select list of the best varieties in all the groups is furnished.

"Seedling Daffodils" receive the attention of the Rev. G. H. Engleheart, M.A., and many interesting suggestions are given to cultivators. In regard to double varieties, it is said:—

"Enough attention has not been paid to the raising of double seedlings. Double Daffodils seed more often than is supposed. A very double Daffodil often has the stigma perfect and visible among the tightly packed petals if the flower is well examined. It is because there is seldom a large pod that the seed is unnoticed. A few seeds may not uncommonly be found in what looks merely like the rather swollen end of the pedicel. I have seedlings of the common 'double Telamonius' now in flower, and several other gardeners can say the same. Hybrid or crossed doubles are not impossibilities. In 1885 I noticed the stigma protruding from the tightly-double trunk of a few flowers of double cernuus. I marked them, and obtained nineteen seeds, eleven of which grew. Out of curiosity I dusted the stigma of one or two with pollen from a yellow Ajax—I believe it was spurious—which was growing near at hand. This spring one of the eleven seedlings is flowering, and the cross was evidently effectual, for the flower—so far as I could judge, of it in its half-opened state before I left home—is drooping, like cernuus, but so yellow as to be almost precisely like the common double yellow. The ten unflowered seedlings seem to vary in leaf and habit, and I may have more oddities to report next year. It may be of service to hybridisers to know that the pollen of double Narcissi commonly gives doubleness to single flowers fertilised with it. In my garden I have some clumps of the common double yellow on a walled south border, which therefore bloom early. In a batch of seedlings from 'Tenby,' sown in 1884, I have one quite double flower, differing in no visible feature from the common double yellow or Telamonius plenus. I understand that my friend Mr. Wolley Dod has had precisely the same experience, and I do not doubt that in both gardens insects conveyed pollen from the double flower to the single. These seedlings have been grown in ranks and watched every year, and no mistake has been made. Our common wild Pseudo-N., when fertilised by pollen of the common double yellow, yields single yellow seedlings, and also doubles of a small intermediate character. Much then, I think, might be done to give us greater variety in double Narcissi."

Mr. Alfred Tait, F.L.S., of Oporto, contributes some "Observations on Portuguese Narcissi," in which several of the best species and natural hybrids found in northern Portugal are described.

THE AURICULA.

The discourses of the Rev. F. D. Horner on Auriculas are always worth hearing or perusal, and the paper in this issue of the Journal is replete with instructive notes.

"In the days of the older raisers there were weak flowers produced and accepted, perhaps for variety's sake, if they were anything like an Auricula, perhaps because to equal the best was an impious expectation. But a sterner rule is laid down for us, and I am not sorry for it. A new Auricula is at once taken for judgment before the best of the older flowers, and if it is not worthy it stands lower than the old second-rates. Some redoubtable champion variety is flung at its diminished head, and that floral missile is at present the grand grey-edge George

Lightbody. Even this flower often shows more faults than one, all the more vexatious because it can do better. But at its best it is far too true an Auricula for us to wish to see it driven out of the field. Our aim is rather to surround it with compeers which it will be a great honour to defeat. Towards that—and not in one class only but in all—I feel a quiet assurance that we are progressing. Another point upon which I would lay all stress is purity. In crosses I would keep class to class to intensify class distinctions, to avoid beaded edges in the green-edged, undecided edges in the greys, and lack of density in the whites. So may the selfs also have their rule of colour to colour. Enterprising exceptions here should be made carefully, for some mixtures only result in dull and common shades of puce, and unattractive tints of plum, to say nothing of fancy sports that scarcely have a name in colour."

The concluding paper is "Orchid Culture, Past and Present," by Mr. H. J. Veiteb, comprising an extremely interesting review of Orchid history, particularly in regard to the practical improvement in culture and the extension of knowledge generally respecting Orchids.



NATIONAL CHRYSANTHEMUM SOCIETY.—A Conference of cultivators and others interested in the Chrysanthemum will be held on September 11th in conjunction with the National Chrysanthemum Society's Exhibition of early flowering Chrysanthemums, with Dahlias and Gladioli, at the Royal Aquarium. The programme prepared by the Sub-Committee appointed to carry out the arrangements includes a paper by Mr. W. Piercy of Forest Hill on "Early Flowering Chrysanthemums," and a paper by Mr. J. Doughty of Angley Park on the "Treatment of Plants (Grown for the Production of Exhibition Blooms) a Short Time Previous to the Shows." The chair will be taken at 4 P.M.

— It is with feelings of regret that I record the death of MR. G. D. VALLANCE OF TRESKO ABBEY, ISLES OF SCILLY. He had of late suffered from an affection of the heart, although he was not obliged to give up his duties till quite recently, when provision was made for him to reside at Yetton. He died at Exeter on the 17th inst., on his way over from Scilly in company with one of his sons. He was well known during the last few years in connection with the fine gardens at Scilly. His gardening career was commenced at Stackpole Court, Pembrokeshire, at an early age, being apprenticed there. After leaving here he served in other places, and in due course took charge of the gardens at Farleigh Castle, near Bath. There he remained seventeen years, gaining the respect of all with whom he came in contact, and more especially by the young men of the village, whom he taught in the evening school gratuitously for many years. After this he went to Pen Hall, near Sherborne, where he remained thirteen years; from there to Tresco, where he discharged his various duties for fourteen years. He was a good all-round gardener, and had many friends, gained by his genial manner.—J. C. F.

— IMPROVED VARIETIES OF VEGETABLES AND FRUITS.—I feel sure it will be interesting to many Fellows of the Royal Horticultural Society to be informed whether the supposition under which I labour, that seeds of improved varieties of vegetables and flowers raised in the Society's gardens, are distributed amongst the Fellows, as in accordance with the practice of the Society.—F. R. H. S.

— GARDEN IVIES.—Many thanks, in which I am sure many of your Ivy-loving readers will join me, for Mr. Shirley Hibberd's clear and concise list of all known varieties. The "Ivy green" is a great favourite here, and we have many varieties from many places, from abbey, and castle, and parsonage, and priest's house, and cottage garden. The delightful vagaries of the Ivy always remind me of the healthy school boy at play. It (and he?) does many things, generally simple and beautiful tricks of Nature, and with the intuition of native genius, and is scarcely ever twice alike.—TEMPORA MUTANTUR.

— GARDENERS' IMPROVEMENT SOCIETIES.—It is becoming the custom, and a very good custom it is, for the members of Gardeners' Improvement Societies to pay annual visits to nurseries and gardens of note that are conveniently accessible. Not only is a well earned day of pleasure thus enjoyed, but information is gathered and hints stored by

the visitors which may be of considerable service in the conduct of the gardens with which they are severally entrusted. Large contingents from the Birmingham and Bolton-le-Moors Societies recently visited Chester, and appear to have been delighted with the ancient city, with the extensive nurseries of Messrs. Dicksons, Limited, and with the large well appointed and admirably managed garden of the Duke of Westminster at Eaton Hall. The visiting members of the Societies desire to record their appreciation of the cordial reception they received at both those establishments.

— MR. W. B. HARTLAND has sent us blooms of his GOLDEN QUILLED SUNFLOWER SOLEIL D'OR, apparently a form of *Helianthus multiflorus plenus*, but without the guard or ray florets of that variety as usually grown in gardens. The flowers did not arrive in good condition, but were bright in colour, and when fresh the blooms would probably resemble somewhat Madame Domage Chrysanthemum. It is no doubt an effective late summer and autumn border plant.

— TUFTED PANSIES.—Will any of your readers tell me who gave the name of Tufted Pansies to our Violas, and why "Tufted," and how they are made into Pansies? To me it seems a stupid name, used only to catch purchasers and sell them as well as the plants. I know a little about Violas and Pansies as you know, but I am in the dark here, and until I have some very logical reason for the change I shall ignore the name of "Tufted Pansies" as a delusion and a snare.—D. S.

— PTERIS TREMULA SMITHIANA.—In your report of the R.H.S.'s meeting, August 13th, in your issue of to-day, we observe you say, "A first-class certificate was awarded to Messrs. J. Laing and Sons for *Pteris tremula Smithiana*." We shall be much obliged if you will correct this error in your next issue, as the plant in question is our own seedling, and was exhibited by us and the certificate awarded to us.—RICHARD SMITH & Co., Worcester. [With great pleasure we make this correction of a clerical error which occurred in copying the awards.]

— THE CEDARS, CASTLE BROMWICH.—What memories of the past are revived by the mention of The Cedars, made famous amongst florists by the late Charles Perry, for a long time the home of the Verbena and one of our best florists. The Cedars is now inhabited by a gentleman who to a very great extent keeps up the traditions of the place by growing Roses, Dahlias, and in every way maintaining the gardens in first rate order. I looked in the churchyard to see the grave of our dear old friend, and I was surprised to find that on no stone or in any way was there an indication that it was Charles Perry's last resting place. But for the fact that I followed him there in company with many other sorrowing florist friends some years ago and knew the spot I should have had to make inquiries to enable me to find it.—D. S.

— REMARKABLE GROWTH OF THE BRITISH TEA TRADE.—It is generally understood that no commercial interests with which our countrymen are connected has grown more rapidly than the production of Tea in various parts of the Queen's Eastern dominions. To exhibit this wonderful advance to the eye, and in geographical and statistical detail, is the design of a "Map showing the great Tea-growing Districts of our Eastern Empire," which has been prepared mainly for the use of the trade by Messrs. R. M. Holborn & Sons of Mincing Lane. In this map the widely separated districts of Assam, Cachar, Chittagong, Dooras, Nagpore, and Ceylon, with the scattered gardens of Kangra, Dehra Deon, Kumaon, Neilgherries, and Travancore are brought into one view. An inserted table shows the extraordinary fact that while as lately as 1873 the imports of Tea growers in Ceylon amounted to no more than 23 lbs., by 1885 they had reached 3,750,000 lbs. Last year they rose to 20,500,000 lbs., and it is estimated that by the close of the present year they will have reached the astonishing total of 40,000,000 lbs. In the production of Indian Tea the advance is no less remarkable, as shown by the statistics of the last twenty years. In 1868 the imports were in round numbers 8,000,000 lbs., in 1878 they were 36,000,000 lbs., and in 1888 they were 92,000,000 lbs. The estimate for 1889 is 105,000,000 lbs. This vast increase of British production is at the expense of the Chinese Tea grower, whose part in ministering to English consumption is a vanishing quantity.

— FRUIT PROSPECTS AT MAINDIFF COURT.—It is of much interest to all concerned in fruit growing to note the effects of the sunless season of 1883 in the fruit garden. Many attribute the failure of the fruit crops this season to the unripened state of the wood, while here we have no reason to grumble, as fruit of various kinds are a good crop. Apples are good, notably Lord Suffield, Worcester Pearmain, and

Cox's Pippin. Apricots are a good even crop. Pears are a heavy crop, in many instances over the average—viz., Jargonelle, Marie Louise, Easter Beurré, Emile d'Heyst, and several others too numerous to mention. Plums are an excellent crop; the trees are trained against a protected wall with an eastern aspect, it was necessary to give them several thinnings, and yet they have too much fruit—Washington, Jefferson, Diamond, Green and Golden Gage are the most notable, and the trees are free of blight. Peaches and Nectarines are abundant on a protected wall with a western aspect; Alexander was ripe on this wall on the 22nd of July. Strawberries were very plentiful; some stools of the well-known variety Vicomtesse Héricart de Thury yielded 4 lbs. of good fruit. Raspberries were good. Damsons are carrying a heavy crop, and are quite clean after the recent rains. Gooseberries are very plentiful, the fruit large and of fine flavour. Black, Red, and White Currants were plentiful; the former were heavily thinned by the birds while they were green. I have never known birds to attack green fruit until this year. Morello Cherries are a pretty good crop, while the May Dukes were light. Figs are well represented by Brown Turkey; and here I may add that great credit is due to the gardener, Mr. G. Harding, for the way he carries out all branches of his calling. It would not be easy to excel the fruit, flower, and kitchen gardens at the present time.—W. H. N.

SEASONABLE NOTES ON GREENHOUSE PLANTS.

CYCLAMENS.

YOUNG growing plants for autumn and early winter are now growing freely in a cool brick pit. The plants are standing on a bed of coal ashes. The plants are shaded from bright sun, as the Cyclamen cannot endure direct sunshine or an arid atmosphere. Careful ventilation is also necessary. Watering must be carefully attended to, and care must be taken not to pour the water in the centre of the corms. The plants should also be dewed over with a fine syringe, using soft water on fine afternoons about 4 P.M.

BOUVARDIAS.

These are now growing freely, and if required for autumn flowering pinching will not now be necessary. The pit or frame, whichever the plants are growing in, may also be freely ventilated, but shade from direct sun. A little Clay's fertiliser sprinkled on the surface once a week will help the plants considerably. We syringe them every afternoon about 4 P.M. Young plants that are late should be encouraged to make growth by keeping them in an intermediate temperature. This is managed by not giving too much ventilation and by closing early in the afternoon.

CARNATION SOUVENIR DE LA MALMAISON.

This Carnation has deservedly become a favourite, and is in great demand in London. The plants have now finished flowering, and layering must be attended to. If allowed to grow on the plants become tall and unsightly, and young plants give the finest blooms. We have just layered our plants. An old hotbed is used; over this is spread a layer of fine sandy soil to the depth of 6 inches, when the plants are turned out of the pots and the balls placed low down. The shoots are then layered, and should receive a good watering, and every afternoon a dewing with a fine-rose pot. As soon as the layers take root these must be removed from the parent plants and potted into 60-sized pots. Pot firmly and keep them in a cool frame until established. Early in November the plants are best placed on a shelf in a cool greenhouse. If allowed to remain in the frame during the winter the foliage becomes spotted. These are not so hardy as the border Carnations.

CINERARIAS.

During the summer months young Cinerarias are best in a cool frame behind a north wall, but away from overhanging trees or high buildings, as this would cause the plants to become drawn. The plants must be potted as soon as the roots show through the drainage in the bottom of the pots. If allowed to become root-bound the plants are ruined. Three parts loam, one peat leaf soil, and one part well pulverised horse manure is a good compost. Pot firmly, and keep the frame rather close and shaded, when the plants will soon become established. On fine and dewy evenings the lights may be drawn off the plants altogether, and remain off during the night; but the lights must be replaced in the morning whilst the dew is on the foliage. This causes the plants to become hardy, and lays a good foundation for successful keeping during the winter months. The foliage must be kept free from insects. A little tobacco powder sprinkled on the under sides of the leaves will keep them in check.

SHOW PELARGONIUMS.

The growth is now ripening, and water must be withheld for a time. Lay the plants on their sides. In the course of a week our plants will be cut down, and still be kept laid down and dry for about ten days, when the pots are best stood in a well ventilated frame, and syringed twice a day. This will cause young shoots to form, when the plants must be turned out of the pots, and have the roots well reduced. The longest roots must be cut in, and the plants placed in as small pots as convenient. Pot very firmly and return to the frame. The following compost is well adapted to the requirements of the Pelar-

gonium :—Three parts fibrous loam of a rather heavy nature, and one part each of leaf soil and well pulverised horse manure, with a little sand. After potting very little water will be necessary, but they should be well syringed once a day. Sufficient water must be given to keep the soil fairly moist, but not wet. If green fly appear fumigate at once.

ZONAL PELARGONIUMS.

Zonal Pelargoniums, either for autumn or winter flowering, should now be well established in their pots, and be stood in the full sun on a bed of ashes. If for winter the flower buds must be kept pinched off until the end of September; but they are much more useful when in bloom from the end of September and through October, so as to come in before the Chrysanthemums, or along with the earliest. A group of Madame Desgrange Chrysanthemum and Zonals have a pretty effect.—A. YOUNG.

AN ESSEX UTOPIA.

A SHORT distance from Ilford on the Great Eastern Railway from Liverpool Street or Fenchurch Street Stations is situated the Barking-side Village Home for Girls, one of several establishments of a similar character under the management of Dr. Barnardo, who, though

portion of two quadrangular spaces, all the front windows facing the garden. The work was commenced in the middle of March, 1888—somewhat late, as the completion of planting was required the same spring. This was accomplished, however, some sixty men being employed, and over 5000 trees and shrubs were planted, few being lost, although the season was so advanced. Spacious lawns were nearly all formed by sowing seed, and they now present a satisfactory appearance; indeed, the same year, by careful mowing a fairly close and fresh sward was produced. The provision of good paths was an important matter in a place of this kind with so many children continually passing to and from the cottages; so after careful consideration it was decided to adopt tar paving, of which about 8000 yards were laid, and the surface having been subsequently dressed with crushed marble, the appearance is as bright as could be desired, and the durability of such paths when well made proves that an additional primary expenditure is really economical. This has been amply demonstrated in the London parks in the east and south-east portions of the metropolis, which are much frequented during the summer months. The main roads have been made of flint and Hertford gravel.



FIG. 23.—VILLAGE HOMES AT BARKINGSIDE.

entirely dependant upon voluntary contributions, has developed an extensive and admirable charitable scheme of inestimable benefit alike to the inmates and the public generally. At Barking-side there are fifty cottages giving accommodation to 800 girls, each home being under the immediate superintendence of a matron, and every arrangement is made with the view of rendering each establishment as much like a home as possible, avoiding the barrack-like method of the ordinary asylums in all respects. The children are the waifs and strays of the great metropolis, and it is impossible to say how many have been rescued from a life of crime and misery by the training and education they have received in such homes as these. Not content, however, with providing mere house comforts, Dr. Barnardo has endeavoured to render the surroundings as pleasing as possible, and with this object he entrusted Mr. Wm. Holmes of the Frampton Park Nurseries, Hackney, with the task of laying out the grounds attached to the cottages, who has succeeded in adding very materially to the attractions of the establishment by the skilful execution of a design well suited to the situation.

There are about fifteen acres of land, the cottages being placed on the outer margin, so that the pleasure ground occupies the central

Three large fountains have been introduced with good effect, well stocked with fish and aquatic plants, the margins being adorned with tasteful and informal rockeries, occupied with suitable trailing and flowering plants. Two handsome wire roseries are also noticeable, and when covered with the roses, which are making good progress, they will be very attractive. The floral display is mostly confined, and very appropriately, to mixed borders of plants. The shrubberies are well furnished, and a gay effect is insured in spring or early summer by the six large beds of carefully selected named Rhododendrons. Every detail has been well considered, and Mr. Holmes, who has had considerable experience in work of this kind, has good reason to be satisfied with the results of his labour. In the illustration (fig. 23), prepared from a photograph by Mr. W. Mountain, 211, Clapham Road, a view is given of a portion of the ground, which will give some idea of the general style.

POTATOES AT CHISWICK.

THE several varieties of Potatoes on trial this year in the Royal Horticultural Society's Gardens were examined on Tuesday last by members of the Fruit and Vegetable Committee, and the following

varieties were selected as productive and good in appearance. The heavy rains of the night previous to lifting affected the whole of them prejudicially, and though several were cooked, it was considered advisable to submit them to a further trial for satisfactorily determining their qualities.

Vegetarian (Dean).—Oval, white, free cropper, fine sample.

The Canon (Dean).—White, round, medium size, splendid crop.

Edgecote Early.—Kidney, medium size, good shape and good crop.

The Governor (Dean).—Kidney, white, large, even, and good crop.

Crown Jewel (Fletcher).—White, round, evenly shaped, medium-sized tubers, great crop.

Bedfont Purple (Dean).—Fine uniform tubers, and a good crop.

Irishman (Kane).—White, round tubers, large with somewhat deep eyes; very heavy crop.

Debutante (Ross).—Bright crimson, round, uniform, good crop, rather small tubers.

Early Victor (Oakshott & Millard).—Large, white, flattish oval, even sized tubers, good crop.

Satisfaction (Oakshott & Millard).—White, round, heavy crop of good sized tubers.

Tacoma (Bliss).—Pink, large, roundish, a heavy crop.

Ellington's Prolific.—White, round, medium size, even; very heavy crop.

THE LONDON PARKS.

SOUTHWARK PARK.

PERHAPS few of those who make a yearly pilgrimage to the London Parks ever visit that situated near the Thames in the south-east district, and known as Southwark Park. It is quite out of the ordinary route, and necessitates a special journey to a densely populated and not too salubrious a neighbourhood, yet to those who are interested in town gardening, and who wish to see how much can be effected by good management under unfavourable circumstances, a visit would not be altogether unprofitable. The fact is that it affords an agreeable surprise to all who are unacquainted with its attractions and resources, as few could expect to find anything of horticultural importance in Rotherhithe or the adjoining districts. Still the Park mentioned would compare favourably with any similar place of public resort in the eastern portion of the metropolis. It is in such a neighbourhood as this that parks, public gardens, and open spaces are most needed and most valuable. It is also satisfactory to note that they are greatly appreciated judging by the large number of people who assemble in them on Sundays and at general holiday times. Securing spaces in such situations, laying out, planting, and maintaining them is a wise expenditure of public money, and cannot bring anything but good results to a portion of the community that experience few of the pleasures of life.

Southwark Park is an extensive tract of land, originally flat and uninteresting enough no doubt, but by the aid of the landscape gardener's art it has been improved out of recognition, and now presents considerable diversity of aspect. It is easily reached by steamboat from London Bridge to Cherry Garden Pier, which is within a few minutes' walk of the two entrances in Union Road. The Deptford Road station on the London Bridge line is also a short distance from the Park, and tramcars pass the Jamaica Level entrance frequently. From the last named gate a hard straight road extends some 200 yards to the refreshment pavilion, and upon turf slopes on each side are numerous carpet and flower beds, bright and effective as they should be in such a position. To the right is the subtropical garden and lake; beyond this a large space reserved for cricket and other sports. On the left are tree-shaded walks and avenues, dense shrubberies, and an open space devoted to band stand and seats for visitors. Nearly the whole of the walks are of asphalt or some similar composition, which are found cleaner, drier, and more durable than gravel, where they are so much frequented as in these parks. Of course some objection can be raised against such paths on account of their appearance, but where a white or light coloured finely broken surfacing material is employed this objection does not hold good. An important matter in forming these parks is to have them well furnished with trees and shrubs that will endure the smoke and fumes of London and make fairly good progress. This necessarily restricts the selection considerably, and renders it difficult to introduce much variety in foliage or contour effects. Amongst trees Poplars, Planes, and Limes are most relied upon, and in shrubs Privet, Aucubas, Lilacs, and common Laurels predominate. Most of these seem to be making progress, and some have attained good size, becoming vigorous well developed specimens.

The principal flower and carpet beds are seen near the Jamaica Level entrance already mentioned, and some of these may be noted. Near the entrance are two large beds upon rather steep slopes on opposite sides of the road. One has a groundwork of Golden Feather, with large panels of *Mentha Pulegium gibraltarica*, edged with *Alternantheras*; smaller panels of *A. versicolor*, and a centre of *A. aurea* edged with *Echeverias*. This is flanked by two crescent-shaped beds, containing scarlet Zonal Pelargoniums, *Calceolarias*, *Lobelias*, and *Antennaria* as a margin. Upon the other side of the road the beds are not quite so bright, *Ageratums*, Pelargoniums, and *Iresine Lindenii* being chiefly employed. One characteristic of several beds in these slopes is that a background or edging of a taller and different plant from that in the front is frequently employed. Sometimes this has a good appearance, but in a few instances it is rather incongruous, and rather spoils the symmetry of the bed.

A crescent-shaped bed raised at the back is one of the most pleasing. A series of panels in a well designed scroll have centres of *Mesembryanthemum cordifolium variegatum*, edged with a neat band of *Lobelia pumila*, *Alternanthera aurea* and *A. magnifica*, with the outer edge of *Violas* and *Echeverias*. The back edge is formed of variegated Pelargoniums with end blocks of *Antennaria tormentosa* and "London Pride." A smaller space is occupied with several beds, the whole surrounded by sloping banks of Ivy, Pelargoniums furnishing the chief colour in the centre. Near this is another crescent-shaped bed with somewhat angular panels in a scroll, Golden Feather forming the chief groundwork, filled in with *Lobelias* and *Alternanthera magnifica*. A star-shaped bed of moderate size is planted with blue and white *Violas*, filled in with Stonecrop, edged with *Antennarias*. *Lobelias* are employed freely in several large beds with good effect, one variety, a deep rich blue with white eye, being conspicuous amongst the others. A peculiar conical bed is seen in one portion of the slope, it is 3 or 4 feet high, covered with *Mentha Pulegium gibraltarica*, and having designs in *Echeverias* and *Alternantheras* on the sides. This is original and arrests attention, but it is rather more strange than beautiful, and is scarcely a style to be recommended; it must be also very difficult to plant and keep in order.

The lake has been tastefully designed; the islands are well planted with trees, and several picturesque peeps are obtained that could not be expected in a park so unfavourably situated as this. The slopes around are of grass kept neatly mown, but the margin of the water itself consists of cable-like tiles or bricks, which impart a rather formal appearance, though something of the kind is probably necessary to keep up the edge. Some of the banks here are raised to a good elevation, and assist in improving the aspect of the surroundings materially. The park generally affords ample proof that it is well attended, and the Superintendent, Mr. G. Bush, evidently understands what is required in the locality.



DISA GRANDIFLORA.

THIS plant often fails to grow satisfactorily through being placed in too warm, too close, and too dry an atmosphere. The best examples that have come under my notice were grown at the shady end, close to the door of a small greenhouse. The position was shaded from the sun, constantly moist, and the door open from the end of May until September. The cool treatment that this *Disa* enjoys has led growers to remove squares of glass directly opposite the plants, and substitute perforated zinc. They certainly enjoy during genial weather a constant supply of air; but during winter, when they are making their growth, they do not appear to appreciate cold air constantly striking upon them. After flowering the plants enjoy a period of rest, and if the position in which they have been grown is such that they can be kept cool and moist without recourse to constant watering all the better. We have found a cool shady frame, where the pans can be plunged in cocoa-nut fibre refuse, a capital place for them for a month or five weeks after flowering. During this time no more water should be given than is really necessary, but take care that they do not become dry, or the roots are very liable to perish. When the pots are plunged in a cool shady place occasional sprinkling with the syringe will be ample to keep the soil moist and the roots in good condition. We prefer at all times to water them by the aid of the syringe. The syringe further assists in keeping them free from aphides and red spider.

MAXILLARIA GRANDIFLORA.

This Orchid is said to flourish well with the coolest treatment, but its progress is very slow; in fact, there is no comparison between the growth of a plant in a cool house and one in a warm structure. It grows strongly and increases rapidly in the Cattleya house, or will flourish admirably in an ordinary stove. Under such treatment it will make and mature at least two growths in the year. It blooms under cool treatment in the autumn, but when grown in heat its flowering time is changed. We have flowers at various times during the year. At one time after growth had been made we removed it for a time to a cool house to rest, and then started it again into growth. It is just possible we had more flowers by this means than by the method of culture we are now pursuing. For some time we have given the plant the same treatment as the Cattleyas enjoy, and anyone anxious to develop a large plant quickly we advise to follow this course. It does well in a pot and roots abundantly in good peat, a little charcoal, with a thin layer of moss on the surface, which in the course of a season

becomes one mass of roots. The roots cling tenaciously to pieces of broken pots, which may be incorporated with the peat instead of charcoal.

ONCIDIUM ORNITHORHYNCHUM.

There are two varieties of this charming *Oncidium*, one having larger and darker flowers than the other. Both forms are worth growing, but that with the darker flowers is decidedly the better. Where the plant is grown in the *Cattleya* house the flower spikes are either visible or will be soon. If grown in a pot or pan slugs must be looked after, for they appear particularly fond of the small tender spikes. It certainly does well in a pot or pan, but displays its arching spikes of small fragrant flowers to much greater advantage when grown in a basket. Frequently the foliage presents a light green, almost a sickly yellow appearance, but this is not natural. When well grown with sweet suitable compost about its roots the foliage will be luxuriant and moderately dark in appearance. Those in pots with us are certainly the most healthy in appearance, the pots being more than half filled with crocks, the plants moderately elevated above the rim and potted firmly in fibrous peat and good sized lumps of charcoal, a little moss only being placed on the surface. The difference in the condition of the plants is, we believe, mainly due to the watering. In baskets they cannot be watered with the same care as when grown in pots. They are liable to have too much by dipping and a free use of the syringe.—ORCHID GROWER.

REVIEW OF BOOK.

The Useful Plants of Australia (including Tasmania). By J. H. MAIDEN, F.L.S., Curator of the Museum. London: Triebner and Co., Ludgate Hill; Sydney: Turner & Henderson, 1889.

THE work is issued by the order of the Committee of Management of the Technological Museum of New South Wales, at Sydney, an institution which contains over 25,000 specimens, and is "intended to occupy a similar position, and fulfil the same purpose" as the leading London Museums. The author, as Curator of such a collection, was well qualified to undertake so important and comprehensive a subject as the one treated in the book under notice, and he has performed his task in a thoroughly satisfactory manner, for it will constitute a valuable work of reference for colonists and others concerned with the commerce of the country. In 696 pages an astonishing number of plants and products are described or mentioned, and the system adopted is as follows:—There are eleven sections devoted to human foods, forage plants, drugs, gums and resins, oils, perfumes, dyes, tans, timbers, fibres, and miscellaneous, by far the greater portion of the book (nearly 300 pages) being occupied with a consideration of the timbers, a subject which, by its importance, had ample claims to this prominence. The other subjects necessarily require much less space, but are exhaustively treated. The names of the plants yielding the various products are given, with their principal synonyms, authorities, natural orders, and references to works containing descriptions; then follow the native names, and particulars of the special products. The names are arranged alphabetically in each section, which is more convenient for reference; but a very full index of vernacular and botanical names also increases the value of the work greatly.

In the section devoted to peds it is curious to note how few plants of any general importance are enumerated, but the references to two are worth reproduction, as showing the character of the book.

PORTULACA OLERACEA.

"The seeds of this plant are largely used for food by the natives of the interior. One would suppose that so small a seed would scarcely repay the labour of collecting, but the natives obtain large quantities by pulling up the plants, throwing them in heaps, which after a few days they turn over, and an abundant supply of seed is found to have fallen out, and can be easily gathered up; the food prepared from this seed must be highly nutritious, for during the season that it lasts the natives get in splendid condition on it. The seeds are jet black, and look like very fine gunpowder. The natives grind them in the usual mill—i.e., a large flat stone or bed stone on which the seed is put, and a smaller one to be held in the hand for grinding, and of the flour they make a coarse paste. 'We had almost daily occasion to praise the value of the Purslane, which not only occurred in every part of the country explored, but also principally in the neighbourhood of rivers, often in the greatest abundance. We found it in sandy and grassy localities so agreeably acidulous as to use it for food without any preparation, and I have reason to attribute the continuance of our health partly to the constant use of this valuable plant. The absence of other antiscorbutic herbs in the north, and the facility with which it may be gathered, entitle it to particular notice.'—*Baron Mueller's Botanical Report of the North Australian Expedition (quoted by Dr. Woolls).*"

TYPHA ANGUSTIFOLIA.

"The young shoots are edible, and resemble Asparagus. The root is excellent. The pollen is used as food by the natives of Scinde, India, being made into cakes.—(Dymock). It is used for the same purpose in New Zealand.

"In a paper by Gerard Krefft (*Proc. Philos. Soc. N.S.W.* 1862-5)

'On the Lower Murray Aborigines,' the following description is given by him of the method of preparing these roots for food. He gives the species name as *T. Shuttleworthii*, but this has been merged in the present species:—"At a certain period, I believe January and February, the women enter the swamps, take up the roots of these Reeds, and carry them in large bundles to their camp. The roots thus collected are 12 to 18 inches in length, and they contain, besides a small quantity of saccharine matter, a considerable quantity of fibre. The roots are roasted in a hollow made in the ground, and either consumed hot or taken as a sort of provision upon hunting expeditions; they are at best a miserable apology for flour, and I almost believe it was on account of the tough fibre thus obtained that these roots were made an article of food."

"This plant is also termed the 'Asparagus of the Cossacks,' the Cossacks of the Don being very fond of it. They prepare it like Asparagus, and cut it, like the latter, when the young shoots are pushing; the tender blanched part is boiled in water seasoned with salt, and served up in the same way as Asparagus. The various culinary preparations to which Asparagus is subjected are suitable for *Typha latifolia*. In collecting it they peel off the cuticle, and select the blanched tender part, usually about 18 inches in length, near the root, and this constitutes a dish, cool, agreeable, and wholesome."

Amongst the forage plants the Grasses naturally predominate, forty-three pages being occupied in their enumeration.

HORTICULTURAL SHOWS.

TAUNTON DEANE.

THE hopes of the managers of this excellent Show must have been at a very low ebb on the day previous. A driving rain, high wind, and cloudy sky seemed bad precursors of a flower show. However, their hopes rose again when Thursday ushered in a fair though threatening day. This, however, passed off, and it may be judged to what extent the Show is patronised by the fact that 3000 paid for admission in the afternoon, and 8000 in the evening, to see what is always an adjunct of the Taunton Show, a grand exhibition of fireworks by Mr. Pain. It was the twenty-second Show of the Society. My own acquaintance with it dates back some fourteen years, during which I have, of course, seen many changes in its staff and amongst its exhibitors, but I see no signs of decay, and taking its last exhibition as a whole, I can safely say that I have never seen a better, and rarely so good a one. One feature was for the first time absent, the beautiful bank of *Gladioli* set up by Mr. Kelway, and this was to me a great blank, for it is a pleasure to see such a stand as he always exhibits. Another exhibitor, too, was not seen there—Mr. Dobree of Wellington—who in years past used to exhibit *Gladioli* so well; but most other exhibits were well represented, and some I have never seen in finer condition.

The Show is held in four tents, two of very large dimensions, in the first of which are placed the plants and cut flowers exhibited in the nurserymen's and open classes; in the second the plants and flowers contributed by amateurs; and in the third the fruit and vegetables, the latter being always a strong feature in the Taunton Show. Besides the plants and flowers entered for competition, a beautiful bank of plants and flowers was shown by Mr. Veitch of Exeter, in which were many novelties.

It may give some idea of the extent of the Exhibition when I say that the stands for cut flowers were many of them placed on the ground for the Judges to examine, as the stages were completely filled. On entering the large tent the grand flowering and foliage plants of Mr. Cypher of Cheltenham, Mr. Cleave, and Mrs. Pearce at once attracted attention. Then along one side was a blaze of bloom supplied by *Pelargoniums*, which are always so well done at Taunton; *Begonias*, which were far superior to anything I have seen here before; while on the other side were arranged the cut flowers, consisting of *Roses*, *Gladioli*, *Asters*, *Verbenas*, *Hollyhocks*, *Carnations*, &c., while the remaining portion of the central stage was filled up by *Fuchsias*, *Lilies*, *Ferns*, and other plants.

One could almost name beforehand what plants are likely to be found amongst the large collections, but I do not think that I have ever seen Mr. Cypher exhibiting in better form than on this occasion. His plants, which obtained the first prize, were *Clerodendron Balfourianum*, *Allamanda grandiflora*, *Bougainvillea glabra*, *Erica Irbyana*, *Erica tricolor ornata*, *Stephanotis floribunda*, *Statice profusa*, *Erica Austriana*, *Erica Barnesii*, *Ixora Pilgrimi*, and *Allamanda nobilis*. In Mr. Cleave's second prize lot were good plants of *Stephanotis floribunda*, *Cleodendron Balfourianum* and *Allamanda nobilis*. The groups of foliaged plants contributed by the same exhibitors were very fine, each holding the same place as in the stove and greenhouse plants. There was a nice collection of six stove and greenhouse plants contributed by Mr. Cypher and Mrs. Pearce. I did not notice anything particularly new in the *Pelargoniums*, in fact the appearance of the plants indicated that they were not youngsters, so that novelties were not likely to be seen amongst them.

I have rarely seen *Roses* in August so well exhibited as in this division of the Show. The stands of Mr. Mallock of Oxford containing some remarkably fine blooms for the season of the year. Amongst them were Captain Christy, Duchess of Bedford, Madame Gabriel Luizet, Grand Mogul, Annie Wood, E. Y. Teas, Comtesse de Nadaillac, Harrison Weir, Francisca Kruger, Xavier Olibo, Souvenir d'un Ami, Charles Darwin, Hon. Edith Gifford, Senateur Vaisse, Charles Lefebvre,

A. K. Williams, Devienne Lamy, Amazon, Le Havre, Niphetos, Alfred Colomb, Comtesse Riza du Parc, Maurice Bernardin, Duc de Montpensier, Madame Berard, and Général Jacqueminot. If this should meet the eye of this exhibitor, might I suggest to him that it would be a great boon, not merely to those who report the Show, but also to the general public if his labels were a little more distinct? They were written very faintly in a very fine hand, and it was exceedingly difficult to decipher them, and made it a difficult matter to take the names. If he does not care to use the printed ones, clear written ones would be a great boon. Messrs. Mack & Son made a long journey from Catterick, Yorkshire, and were a good second in forty-eights, third in twenty-four trebles. Amongst their flowers was a beautiful triplet of their fine variety. Sir Rowland Hill, its rich dark colour marking it out as a very distinct variety. The Gladioli were very disappointing; few of any real excellence were exhibited, and those that were set up were nameless seedlings, of which probably the exhibitor will know nothing next year. Nor were the stands effectively set up, the spikes were too much of a length, so that the back rows were completely hidden by those in front. Asters were very fine in both sections, the flowers being clean and fresh. There are some good blooms of Dahlias exhibited by that active exhibitor, Mr. T. Hobbs of Lower Easton, Bristol, and by the local grower, Mr. Watson; but Dahlias have fallen off here, the number of varieties not being so large as formerly, and the fine stands of Messrs. Keynes, Williams & Co. being much missed.

There is no place that I know where Achimenes are so well exhibited as at Taunton, and it was impossible to imagine finer plants than those exhibited by J. Marshall, Esq., whose able gardener, Mr. Lucas, has grown them to such perfection. The Roses in this division were not equal to those in the open classes, but a very beautiful box of Teas was shown by Mr. H. Fowler of Claremont, showing what a fallacy it is to suppose that this very beautiful class will not flourish in the neighbourhood of Taunton. Mr. Fowler had also a good stand of Carnations.

Table decorations form a prominent feature of the Taunton Show, and it was pleasant to see that the lessons taught by Miss Cypher in former years had not been thrown away, for the latter, which obtained first and second prizes, were excellent and in thoroughly good taste—the light and elegant character of the centrepieces was all that could be desired. The hand bouquets also were very good, and the decorative tent generally was a credit to the exhibitors.

It was a matter of great regret that one of the very earnest Secretaries was indisposed, but his colleague worked "double tides," and the Committee was indefatigable in its efforts to make things go smoothly for all, and thus ensure the success of the Show, which is unsurpassed at this season of the year by any in the kingdom.—D. Deal.

Fruit.—A grand lot of fruit was shown, this department being quite equal to the rest of a generally superior exhibition. The first prize for a collection of ten dishes of fruit was awarded to Mr. W. Iggulden, who had better Black Hamburg Grapes than were shown by him at Weston-super-Mare and Exeter, but the rest of the exhibit did not differ materially from what has previously been noted. Mr. Nicholson, gardener to the Earl Fortescue, South Molton, was placed second, but he certainly had some luck in the matter, as the third prize collection, staged by Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was the most generally satisfactory exhibit. Mr. Nicholas had a very fine Smooth Cayenne Pine Apple, superior Brown Turkey Figs, and an exceptionally fine dish of Cherries. The last-named might be described as a very large form of Black Tartarian, fully equalling that good variety in point of quality, and surpassing the largest Morellos in size. It is a seedling of great value. Several collections of four dishes of fruit were staged, Mr. Daffurn, Weston-super-Mare, being well first with good Madresfield Court Grapes, Grosse Mignonne Peaches, Elruge Nectarines, and Hero of Lockinge Melon. Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, was second, and Mr. G. J. Barnes, gardener to T. C. Daniels, Esq., third. The last named was a good first for Muscat of Alexandria Grapes, and Mr. J. Lloyd second; and for any other white variety Mr. J. Webber, gardener to G. F. Luttrell, Esq., was first, and Mr. C. C. Cooper, gardener to C. L. Collard, Esq., second, both having good Buckland Sweetwater. The first prize for Black Hamburg Grapes was awarded to Mr. Iggulden, who had fine bunches and berries a little wanting in colour. Mr. J. Loosemore, gardener to C. Cooper, Esq., was a creditable second. In the any other black class Mr. W. Daffurn was first, and Mr. J. Lloyd second, both having fairly well finished Madresfield Court. Mr. Bryant was first, and Mr. Crossman second, for a Melon, a considerable number of fruit being shown. Mr. Nicholas was first, and Mr. Bull second, with a Pine Apple, both having very fine fruit of Smooth Cayenne. The first prize for Peaches was awarded to Mr. Iggulden for a highly coloured dish of Barrington, Mr. Daffurn being second with a fine dish of Grosse Mignonne. For Nectarines these positions were reversed, Mr. Daffurn being first for highly coloured Elruge. Apricots, Plums, Cherries, and other hardy fruit were all extensively and well shown, and immense quantities of vegetables were staged in various classes by professional gardeners, amateurs, and cottagers.

WESTBOURNE AND DISTRICT.—AUGUST 7TH AND 8TH.

THE above Society held its fifth annual Exhibition of plants, fruits, flowers, and vegetables on the above dates in a pasture field at Branksome Deane, by the kind permission of Lord Wimborne. The place in which the Show was held is a very suitable site for a fruit and flower show, being surrounded by trees, and within half an hour's walk of the fashionable seaside town of Bournemouth. Every praise is due to

the Committee and energetic Hon. Secretary, Mr. S. Minty, and his assistant, Mr. K. Pottle, for the business-like manner in which they all performed their duties. All that was required to insure success was fine weather, which, unfortunately, the Society did not have on the opening day, as there were heavy showers at short intervals throughout the day. The most successful exhibitors in the open classes were Mr. William Earp, gardener to J. S. Sellon, Esq., Horne Towers, Bournemouth; Mr. G. Roberts, gardener to Mrs. M. Smalley; Mr. C. Phillips, gardener to T. J. Hawkinson, Esq.; and Mr. Taylor, gardener to R. J. Ellershaw, Esq., all of Bournemouth or district.

Plants.—Three collections of stove and greenhouse plants, distinct varieties, not less than four flowering, and in pots not exceeding 11 inches, were staged. Mr. C. Phillips was first with creditable plants of *Acalypha tricolor*, beautifully coloured; *Chamærops humilis*, *Allamanda Hendersoni*, *Cocos Weddelliana*, *Dracena australis*, *Pandanus Veitchi*, and *Plumbago capensis*. Mr. W. Earp was a very close second, his best plants being *Clerodendron Balfourianum*, *Croton irregularis*, and *Pandanus Veitchi*. Mr. Earp had the best specimen stove or greenhouse plant. Mr. Phillips was first for nine varieties of exotic Ferns, showing among others good plants of *Alsophila australis*, *Davallia canariensis*, *D. bullata*, *Adiantum formosum*, and *A. euneatum*. Mr. Earp was a very close second, his best plant being *Polypodium aureum*. Three good collections of Ferns were shown in this class. The same exhibitor was first for six Fuchsias, showing plants about 5 feet high, well furnished with healthy foliage and profusely flowered shoots, with one exception. He was also first for six healthy well-flowered trained Zonal Pelargoniums. With three plants of Tuberous-rooted Begonias Mr. E. G. Roberts was first for small but well-flowered plants. In the class for six pans or pots of Achimenes Mr. C. Phillips was once more to the front, showing fairly good plants. He also had the best six plants of flat trained Coleus, well coloured. Mr. Bush, gardener to Lord Wimborne, Branksome Deane, Bournemouth, had the best group of plants arranged for effect on a space not exceeding 60 feet. The plants used were suitable for the purpose, and were tastefully arranged.

Cut Flowers.—These were not shown very extensively, but they were on the whole very good, especially the double Dahlias, with which Mr. Elsworth easily secured first prize; the same exhibitor taking chief honours, out of three stands shown, for twelve Roses. Miss E. A. Watkins had the best hand bouquet, and Mr. Blanford, gardener to W. R. Sharp, Esq., the second best, for tasteful arrangements. Asters and Geraniums in varieties were also shown in fairly good form.

Fruit.—The competition in the fruit classes was not very keen, but the exhibits were of good quality. Mr. G. Roberts had the best two bunches of Black Hamburg Grapes, the bunches being of medium size, shapely, fine in berry, and beautifully coloured. Mr. William Earp was a close second. In the corresponding class for white Grapes Mr. Earp was first with fairly good examples of Chasselas Musqué; he was also easily first for a collection of six sorts of fruit, with Black Hamburg Grapes, George IV. Peach, Brown Turkey Figs, Paradise Melon, Jargonelle Pears, and Cherries. Mr. Earp was also first for six Peaches with good clean fruits of Grosse Mignonne, and dessert Apples with fairly good specimens of Early Julien. Mr. Greenaway, gardener to T. B. Scott, Esq., had the best flavoured Melon in a good sized Hero of Lockinge. Mr. Roberts was first for culinary Apples with fine specimens of Lord Suffield.

Vegetables.—Three good collections of six sorts were staged. Mr. Earp led the way, showing Gladiator Peas, Moore's Cream Marrows, Chiswick Favourite Potato, Veitch's Perfection Tomato (very good), and Mammoth Runner Beans. Mr. Bush was second, his Tomatoes and Onions very good, and Mr. C. Phillips was third. Mr. T. K. Ingram, Parkstone Nursery, was a good first with a brace of large, handsome, fresh-looking Cucumbers of what appeared to be Duke of Edinburgh. Messrs. Phillips & Sons, Westbourne, were second with good fruits. Mr. Ingram was again to the front with an admirable dish of Veitch's Perfection Tomato. Mr. Earp was a creditable second.

Messrs. Sutton & Sons' Special Prizes.—Mr. Earp was first for six fruits of Reading Perfection Tomato, showing large, handsome, even, and highly coloured fruits; Mr. Bush was second; and Mr. Andrews, gardener to M. Coates, Esq., Bath Hotel, Bournemouth, was third. Messrs. James Carter & Co. gave three prizes for collections of six sorts of vegetables. Mr. C. Phillips was awarded first prize, his best dishes being Tomatoes, Runner Beans, and Onions.

Miscellaneous Exhibits.—Messrs. Watts & Sons, The Palace Nurseries, Bournemouth, arranged, not for competition, a very pretty and bright group of plants, semicircular in form at one end of the centre of the large tent; Mr. J. K. Ingram having arranged to very good effect a similar group at the other end of the same tent. Both these groups were very much, and deservedly so, admired by visitors. Mr. Haskins, Branksome Nursery, and Messrs. Phillips & Sons, also arranged two smaller groups on either side the entrance of this tent. In the classes set apart for single-handed gardeners Mr. Taylor of Branksome Park was the most successful, taking first out of four good groups with well-grown clean plants; Mr. Stedwell being second, first for specimen stove or greenhouse plants, and first for six stove and greenhouse plants, Mr. Bush being second.

NATIONAL CARNATION AND PICOTEE SOCIETY (NORTHERN SECTION).

THIS Society held its annual meeting on Saturday, the 10th inst., at the Botanical Gardens, Manchester. Though there were more exhibitors than last year, the Show, as a whole, was not to be compared with

the Oxford Show. One difference specially noticeable between these Exhibitions is, that whereas at Oxford the quality is even throughout, here—after the first, second, or third prize stands—there is a great falling off. There was great dissatisfaction among exhibitors at the judging in the single bloom classes, especially in that for scarlet flakes, where the first prize bloom was not nearly so good as the bloom of Robert Cannell, which was placed third; or one of Matador, which did not receive a prize at all. Mr. T. Lord of Todmorden, Mr. J. Whitham, Hebden Bridge; and the Birmingham exhibitors (Messrs. Sydenham, Brown, and Jones), as at Oxford, took the greater portion of the prizes. The following are the leading prizewinners:—

Class A, twelve Carnations, dissimilar.—First, Mr. T. Lord, Todmorden, with George Melville, Admiral Curzon, Thalia, Wm. Bacon, Edward Rowan, Jessica, J. D. Hextall, John Ball, Wm. Skirving, George, Shirley Hibberd, and Reginald Power. Second, Mr. R. Sydenham, Birmingham, with Alisemond, Sarah Payne, George Melville, Thalia, Joseph Lakin, James Douglas, Master Fred, J. T. Hedderley, Rob Roy, Matador, Arthur Medhurst, and Mrs. Andrew. Third, S. Barlow, Esq., Stakehill, Castleton, Manchester. Fourth, Mr. F. Law, Rochdale. Fifth, Mr. J. Beswick, Middleton, Manchester.

Class B, twelve Picotees, dissimilar.—First, Mr. T. Lord, with Mrs. Sharp, Zerlina, Mrs. Payne, Alliance, Morna, Minnie, Thos. William, Lady Louisa, Royal Visit, Nellie, Favourite, and Brunette. Second, Mr. Robert Sydenham with Seedling, Hilda, Annot Lyle, Mrs. Chancellor, Edith D'Ombra, Favourite, Dr. Epps, Mrs. Payne, Mrs. Bower, Frauline, Baroness Burdett Coutts, and Mrs. Sharp. Third, S. Barlow, Esq.; fourth, Mr. J. Beswick; fifth, Mr. F. Law. **Class C, twelve Carnations, nine dissimilar.**—First, Mr. T. Helliwell, Todmorden, with Admiral Curzon, Cristagalli, Robert Lord, Master Fred, Squire Llewelyn, Jas. Douglas, Ivenhoe, Wm. Skirving, Sybil, and George. Second, Mr. J. Whitham, Hebden Bridge; third, Mr. J. Edwards, Blackley, Manchester; fourth, Mr. A. R. Brown, Birmingham. **Class D, twelve Picotees, nine dissimilar.**—First, Mr. J. Whitham, with Morna, Thos. William, Royal Visit, Zerlina, Nellie, Mrs. Niven, Mrs. Sharp, Brunette, Lady Louisa, Ann Lord, and Mrs. Chancellor. Second, Mr. A. R. Brown, with Constance Heron, Mrs. Payne, Imogen, Erhel, Favourite, Muriel, J. B. Bryant, Campanini, Dr. Epps, and Edith D'Ombra; third, Mr. J. Edwards; fourth, Mr. T. Helliwell; fifth, Mr. J. Whittaker, Middleton, Manchester.

Class E, six Carnations, dissimilar.—First, Mr. J. Maddocks, Loft-house Hall, with George Melville, Wm. Skirving, Cristagalli, Robert Houlgrave, John Hines, and Lord Milton. Second, Mr. G. Thornley, Middleton. Third, G. Whittaker. Fourth, Mr. S. Lord, Rochdale. Fifth, Mr. W. Bacon, Derby. Sixth, Mr. J. Bleakley, Middleton.

Class F, six Picotees, dissimilar.—First, Mr. A. W. Jones, Birmingham, with Mrs. Sharp, Mrs. Chancellor, Thos. William, Nellie, Mrs. Sharp, and Muriel. Second, Mr. J. Maddocks. Third, Mr. G. Thornley. Fourth, Mr. G. Bleakley. Fifth, Mr. W. Bacon. Extra prizes, twelve Selfs, Fancies or yellow grounds.—First, Mr. A. R. Brown, with grand blooms of Almira, Dorothy, Annie Douglas, Colonial Beauty, Agnes Chambers, The Governor, Germania, Dodwell's S 191, Terra Cotta, Dodwell's S 192, and Mary Morris. Second, Mr. T. Lord. Six exhibitors.

Carnations.—Class G, single blooms, Scarlet Bizarres.—First, second, third, and fourth, Mr. T. Lord, with Admiral Curzon and Robert Lord. Fifth, Mr. J. Yates, Disley. **Crimson Bizarres.**—First, Mr. G. Thornley, with Master Fred. Second, third, and fifth, Mr. T. Lord, with a seedling and Richard Bealey. Fourth, Mr. R. Sydenham. **Pink and Purple Bizarres.**—First, second, and third, Mr. T. Lord, with Sarah Payne, Wm. Skirving, and John Harrison. Fourth, Mr. J. Beswick. Fifth, Mr. R. Sydenham. **Scarlet Flakes.**—First, second, third, fourth, and fifth, with John Ball, Sportsman, Robert Cannell, and Henry Cannell. **Purple Flakes.**—First, second, and third, Mr. Lord, with Gordon Lewis and Earl of Wilton. Fourth, Mr. J. Beswick. Fifth, Mr. T. Helliwell. **Rose Flakes.**—First, Mr. R. Sydenham, with Thalia. Second, Mr. Helliwell, with Cristagalli. Third, fourth, and fifth, Mr. T. Lord, with Sybil.

Picotees.—**Heavy Red.**—First, third, and fourth Mr. Lord with Dr. Epps; second Mr. Whitham with Morna; fifth Mr. Helliwell. **Light Reds.**—First Mr. J. Whitham, second Mr. Lord, third Mr. Sydenham, fourth and fifth Mr. J. Bleakley, all with Thos. William. **Heavy Purples.**—First Mr. J. Whitham with Mrs. Chancellor; second and fourth Mr. J. Beswick with Muriel and Zerlina; third Mr. Lord with Mrs. Chancellor; fifth Mr. Yates with Muriel. **Light Purples.**—First and fourth Mr. T. Lord with Mary; second Mr. A. W. Jones with Baroness Burdett Coutts; third Mr. Helliwell with Ann Lord; fifth Mr. J. Bleakley. **Heavy Roses.**—First Mr. Lord with Mrs. Payne; second Mr. Brown with Mrs. Payne; third Mr. Helliwell with Lady Louisa, fourth Mr. Sydenham, fifth Mr. Beswick. **Light Roses.**—First and second Mr. A. W. Jones with Favourite; third Mr. G. Yates, fourth Mr. Lord, fifth Mr. Sydenham with the same variety. **Premier Carnation,** Admiral Curzon, exhibited by Mr. Helliwell. **Premier Picotee,** Thos. Payne, exhibited by Mr. T. Lord.—A NORTHERN FLORIST.

WESTON-SUPER-MARE.—AUGUST 13TH.

THIS was in every respect a most successful meeting. The competition in the plant classes was especially good, cut flowers, fruit, and vegetables also being well represented. Mr. F. T. Perrett is the courteous and energetic Secretary, and he being well assisted by an efficient Committee, everything passed off very satisfactorily to all concerned.

The premier prizes of the Show were offered in the class for twelve

varieties of stove and greenhouse plants, not less than four fine foliageed plants being included. Mr. J. Cypher was well first for a most perfect group, which comprised an immense *Phœnocomma prolifera* Barnesi, very fine; *Bougainvillea glabra*, *Allamanda nobilis*, *Statice profusa*, *Erica Iveryana*, *Stephanotis floribunda*, *Allamanda nobilis*, *Erica ampullacea* Barnesi, *Clerodendron Balfourianum*, *Crotons* Queen Victoria and Sunset, *Latania borbonica*, *Cycas circinalis*, all in fine condition. The second prize was well won by Mr. G. Lock, gardener to B. Cleve, Esq., Crediton, Kentia Belmorana, *Crotons* Johannis and Chelsoni, and *Ixora Williamsi* being his best plants. Mr. E. Wills, gardener to Mrs. Pearce, Southampton, was third, and Messrs. W. Brooks & Son, Weston-super-Mare, a creditable fourth. For six flowering plants Mr. Cypher was easily first, and Mr. H. Jones, gardener to J. Canning, Doherty, Esq., Bath, second, the latter having small, but creditably flowered specimens. With six fine foliageed plants Mr. Lock was first, among these being grand specimens of *Dasyliion acrotrichum* and *Crotons* Disraeli and Williamsi. Mr. Cypher followed closely, and Mr. H. Jones third. For four flowering plants Mr. Lock was well first, these including a grand pot of *Eucharis amazonica* with thirty-five spikes. Mr. Wills was second. Mr. Cypher was first in the classes for single flowering plants, and Mr. Lock had a first prize for a grand plant of *Dracæna Warreni*. There were only two exhibitors of six Orchids, Mr. Cypher winning with well-flowered plants of *Cattleya crispa*, *Cypripedium Stonei*, *Odontoglossum Harryanum*, *Cattleya Gaskelliana*, *Cypripedium caudatum*, and *Saccolabium Blumei*. Mr. W. Brooks was a good second. For a new plant Mr. Cypher was first, staging *Cypripedium grande* with three blooms; Mr. Lock was second for *Croton Clevei*, a highly coloured sport from C. Disraeli.

Adiantums were extensively shown, the best six specimens being arranged by Mr. Holland, gardener to W. Ash, Esq., among which was a fine plant of *A. farleyense*. Mr. Wills was second, and Mr. Jones third. The best group of eight varieties of exotic Ferns was staged by Mr. H. Jones, who had a neat *Dicksonia squarrosa*, *Alsophila excelsa*, *Gymnogramma Mertensi*, and *Gymnogramma Wetenhalliana*. Mr. W. Brooks was a good second. The best four Ferns were staged by Mr. G. Wills, J. P. Cassell, Esq., being second. Mr. W. Brooks was well first for six Fuchsias, and was also successful for a single specimen. Mr. Brooks was also first for six Liliiums, and Mr. Holland had the best four Liliiums. Tuberous Begonias were better than usual. Mr. W. Brown, gardener to W. W. Aldridge, Esq., was well first for six varieties, and Mr. Brown was first for four specimens. The best Cockscombs were shown by Mr. A. Durston, and Mr. Hollands had a first prize for *Achimenes*. Messrs. Hollands, Brooks, S. Bisdee were the principal prizewinners in the various classes for Zonal Pelargoniums, Petunias, and Gloxinias.

The competition for cut flowers generally was remarkably keen and good. The best forty-eight triplets of Roses were staged by Mr. J. Mattock, among these being perfect blooms of Louis Van Houtte, Madame Lambert, Rubens, Devienne Lamy, Horace Vernet, Lady Sheffield, Duchess of Bedford, Senateur Vaisse, Marie Baumann, A. K. Williams, Marie Van Houtte, E. Y. Teas, Baron de Bonstetten, and Madame Norman Néruda. Dr. Budd, Bath, was a good second, and Messrs. Cooling third. The first prize for twelve Roses, single blooms, was awarded to Messrs. Perkins & Sons, Coventry, Maréchal Niel, C. Lefebvre, H. W. Eaton, and Mdlle. Annie Wood being especially noteworthy. Mr. T. Hobbs was second, and Messrs. Heath & Son third. Several good stands of Teas were staged, Mr. J. Mattock was well first, his best being Comtesse Nadailac, Francisca Kruger, and Princess Vera. Dr. Budd was second, and Messrs. Cooling & Son third. Dahlias were beautifully shown. Messrs. Heath & Son, Cheltenham, were first for twenty-four distinct varieties, Mr. F. Harris second, and Mr. J. Newman third. Mr. Evry, Bath, was first for twelve varieties, and Mr. Hoskins second. Mr. A. A. Walters, Bath, was placed first for twelve varieties single Dahlias, the second prize going to Mr. J. Carr, Bath. A first prize was awarded to Mr. R. W. Poynter, Taunton, for twenty spikes of Gladioli, Mr. S. Tottle being second; while for twelve varieties Mr. J. Mattock was first, and Mr. Weible second. The prize-winners for Asters in various classes were Messrs. W. J. Jones, Dr. Budd, T. Evry, Cooling & Sons, G. Garraway, all from Bath. The stands of twenty-four bunches of cut flowers was well won by Mr. W. James, Redland; Mr. R. W. Gibbs being a good second, and Mr. Brooks third. In the class for twelve bunches, distinct, Mr. M. Cole, Bath, was well first with a capital exhibit of single and double Begonias, the second prize going to Mr. Holland for a greater variety. No less than thirteen competed in the two classes for vases, and a beautiful display was made. Mr. M. Hockings was well first in both instances, his exhibits being most praiseworthy. Mr. W. Brooks was second, and Mr. T. Meakins third in both classes. Very good also were the bouquets. Messrs. Perkins and Son were well first, Mr. Winstone second, and Mr. W. Brooks third.

The competition in the fruit tents was scarcely so keen as usual, but there was some fine produce staged. The best collection of eight dishes was shown by Mr. W. Iggulden, gardener to the Earl of Cork, Frome, who had fairly good Muscat of Alexandria and fine Black Hamburg Grapes, large richly coloured Barrington Peaches, good Hero of Lockinge Melon, and other creditable dishes. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was a good second, his collection including a handsome fruit of his new Melon, good Madresfield Court and Muscat of Alexandria Grapes. The first prize for four varieties was well won by Mr. W. Daffurn, gardener to D. Cox, Esq., who had extra good Madresfield Court Grapes, Hero of Lockinge Melon,

Elruge Nectarines, and Peach Grosse Mignonne. Mr. W. Strugnell, gardener to A. R. Baily, Esq., Frome, was a very creditable second, his Muscat of Alexandria being very good. There were eleven entries in the class for Black Hamburgh. Mr. Iggulden was well first for good sized bunches perfectly finished, Mr. Crocker, gardener to Mr. W. H. Miles, being second with very fine bunches and berries only slightly inferior as regards colour. In the any other black class Mr. W. Daffurn was first and Mr. J. Lloyd second, both having very creditable Madresfield Court. The first prize for Muscat of Alexandria was awarded to Mr. Lloyd, who had good well coloured bunches, the second prize going to Mr. Strugnell for larger but scarcely so well finished examples. In the any other white class the first prize was awarded to Mr. Jones for small but perfectly ripened bunches of Buckland Sweetwater, the second prize going to Mr. Crocker for much larger well coloured examples of the same variety. The first prize for a Melon went to Mr. Lloyd for a fine fruit of a seedling obtained by crossing Hero of Lockinge with Longleat Perfection, and which proved of very superior quality. Messrs. Iggulden, Daffurn, Lloyd, Gullick, and James were the principal prizewinners in various other classes for fruit.

Vegetables as usual were extensively shown, notably in the classes for which the prizes were provided by Messrs. Sutton & Son and Messrs. Webb & Sons. The most prominent prizewinners were Messrs. Garraway, Evry, Tilley, G. Lock, Perryman, J. Reid, and J. Hall.

EXETER.—August 14th.

WANT of suitable space precludes the bringing together of a very extensive display of plants at this annual meeting, but there is no lack of all other exhibits, and nothing but bad weather marred the success of the Exhibition. Mr. G. D. Cann is the Honorary Secretary, and no one can possibly complain of the way in which this gentleman endeavours to meet the wishes of both the exhibitors and visitors to the Show.

In the plant classes Mr. W. Rowland, gardener to W. Brock, Esq., had matters very much his own way, his old and most formidable rival, Mr. G. Lock, being absent. To Mr. Rowland was awarded the silver cup for nine stove and greenhouse plants in flower, among these being large well-flowered specimens of *Ixora Williamsi*, *Anthurium Andreanum*, *Allamanda Hendersoni*, *Ixora princeps*, *Bougainvillea glabra*, *Stephanotis floribunda*, *Lapageria rosea*, and a *Eucharis amazonica* with forty spikes. Mr. Rowland also had a first prize for nine fine-foliaged plants, these including a fine *Arceuthobium rubra*, and good specimens of *Crotons Johannis*, *Disraeli*, and *Andreanum*. The best Ferns were staged by Mr. Rowland, and he was likewise easily first for a circular group of miscellaneous plants 12 feet in diameter. The latter was a very charming arrangement, the groundwork being composed of *Adiantum cuneatum*, out of which sprung numerous elegant Palms, *Crotons*, Grasses, and flowering plants, a ring of *Gloxinias* being especially noteworthy. Mr. A. Williams was second in this class, his group comprising numerous richly coloured and well-flowered plants. The first prize for a group 8 feet in diameter was awarded to Mr. W. Snell, gardener to Colonel Garratt, who had a fresh and bright arrangement, while Mr. T. Prothero, gardener to T. Knapson, Esq., also exhibited creditably, and secured the second prize. The most successful competitors in the fairly well-filled classes for Zonal *Pelargoniums*, *Begonias*, *Fuchsias*, and other flowering plants were Messrs. Prothero, T. Knapson, A. Williams (gardener to W. C. Sim, Esq.), W. Rowland, and R. Staddon (gardener to Colonel Courtney), all exhibiting creditably.

There were thirteen classes provided for cut flowers, and in most of them the competition was very keen. Especially fine were the Dahlias exhibited by Mr. J. Nation; Messrs. S. Crump and A. Williams also competing successfully with these. Mr. R. H. Poynter was well first for twelve *Gladioli*, and Mr. Rowland was first for a collection of choice cut flowers, and Mr. J. Ebbutt a good second.

The greatest interest, however, was centred in the fruit and vegetable classes, in all of which the competition was remarkably good. The best collection of ten dishes of the former was staged by Mr. W. Iggulden, gardener to the Earl of Cork, Frome, who had good Black Hamburgh and Muscat of Alexandria Grapes, highly coloured Belle-garde Peaches, Hero of Lockinge Melon, and other good dishes. The second prize was awarded to Mr. J. T. Ebbutt, gardener to Rev. F. A. W. Hamilton Gell, the Queen Pine Apple in this collection being exceptionally fine. It weighed not less than 6 lbs., and was cut from a plant scarcely twelve months old. In the class for six varieties of fruit, two exhibitors unfortunately included too many fruit in their dishes, and had to be disqualified accordingly. Mr. A. E. Crossman, gardener to J. Brutton, Esq., was fortunate in winning the first prize; Mr. R. Mairs, gardener to Sir J. Shelley, Bart., being a close second; and Mr. J. Sparkes, gardener to H. S. Manley, Esq., was highly commended. Twelve competed in the class for Black Hamburgh Grapes, but Mr. Iggulden was well first, the second prize going to Mr. R. Pike, gardener to the Rev. Pike, who also had good-sized well-finished examples. The best Muscat of Alexandria were staged by Mr. G. J. Barnes, gardener to T. C. Daniel, Esq.; Mr. R. McMillan, gardener to Sir G. S. Stuckey, being second. Mr. J. Langworthy, gardener to G. Benmore, Esq., was first and Mr. G. J. Barnes second for Madresfield Court. Mr. R. Pike first and Mr. J. Langworthy second for Buckland Sweetwater. Mr. Iggulden first and Mr. J. Mayne, gardener to E. Allen, Esq., second for Foster's Seedling, the exhibits being creditable, and the competition good in each instance. Mr. G. J. Barnes staged a good fruit of Stodleigh Court Seedling in the class for a green flesh Melon; Mr. Crossman being second with a seedling of his own raising. In the class for a scarlet

flesh variety, Mr. Iggulden was first with a good fruit of Blenheim Orange, the second prize going to Mr. W. R. Baker, gardener to the Rev. L. D. Acland. Mr. Iggulden was the most successful in the various classes for Peaches, Nectarines, and hardy fruits, taking eight first prizes in all; and other prizewinners were Messrs. W. Martin, gardener to Lord Poltimore; R. Mairs, W. Snell, J. Moggridge (gardener to J. Langworthy, Esq.), Yeo, and W. R. Baker, J. H. Copp (gardener to W. E. S. Erle-Drax, Esq.). Mr. C. Bull, gardener to General Sir Redvers Buller received a first prize for a fine fruit of Smooth Cayenne Pine Apple, Mr. W. Snell being second.

Vegetables were largely shown, not only in the classes for collections, but also as single dishes, and throughout the quality was good. The best collection of twelve varieties was set up by Mr. G. H. Copp, who had very fine Wright's Giant White Celery, Autumn Giant Cauliflower, Veitch's Main Crop Onion, Snowball Turnips, Pragnell's Exhibition Beet, Duke of Albany Pea, Ne Plus Ultra Runner Bean, Lyon Leek, Sutton's Seedling Potato, Ellacombe's Parsnip, New Intermediate Carrot, and Perfection Tomato. Mr. R. Mairs was a good second, his best dishes being Perfection Tomato and White Gem Celery; the third prize going to Mr. W. R. Baker, who also had capital vegetables.

There were several non-competitive exhibits, which added greatly to the general effect. The most noteworthy among these was a long bank of Palms, Japanese Maples, Ferns, Lilliums, Orchids, *Begonias*, and other choice flowering and fine-foliaged plants, with which were associated large quantities of cut *Gladioli*, *Roses*, and herbaceous plants, all artistically grouped, and which were contributed by Messrs. R. Veitch and Sons, Exeter. Mr. S. Randall, Exeter, and Mr. W. B. Small, Torquay, also arranged effective groups of plants and cut flowers, and Mr. B. R. Davis had a very attractive exhibition of cut blooms of Tuberous *Begonias*, a class of plants which he has long made a speciality with the best of results. The doubles were especially good, notably *Mauvette*, *Conical*, *Althæflora*, *Miss Hayward*, *Lorna Doone*, *Dandy*, *Ivel*, *Mistress French*, *Gardeniæflora*, *Robin Adair*, *Picotée*, and *Octavia*.

SUTTON AND CHEAM.—August 14th.

THE above Society appears to be increasing in popularity each year, the Show on Wednesday last being pronounced by the Judges to be the best that has been held in the district. Unfortunately the afternoon was wet, and consequently many people were prevented from visiting the Exhibition, and also the pretty grounds in which it was held, belonging to H. L. Antrobus, Esq., Cheam House. The Society has for several years been favoured with fine weather, and the Committee has wisely placed a surplus with their Treasurer in case of a rainy day. The specimen plants were exceptionally fine. Mr. W. King, gardener to Philip Crowley, Esq., Waddon House, Croydon, was again successful in gaining the premier award for twelve stove and greenhouse plants, which were large, clean, and very fresh. Among the foliage plants a fine specimen of *Dracaena Lindenii* and a richly coloured *Croton Queen Victoria* were conspicuous; large plants of *Bougainvillea glabra*, *Allamanda grandiflora*, and *Dipladenia amabilis* were well flowered. For his eight foliage plants he received a similar award for remarkably well grown plants. Mr. T. N. Penfold, gardener to the Rev. Canon Bridges, Beddington House, was a good second in both classes. He had also the best half dozen exotic Ferns, showing *Microlepia hirta cristata*, *Asplenium nidus avis*, and others in capital form. Mr. J. Cook, gardener to S. Ezekiel, Esq., Sutton, was second with smaller but healthy plants. For a single specimen plant in bloom Mr. King and Mr. Penfold were placed equal second, the former having a large *Pancratium*, and the latter an equally well-bloomed *Bougainvillea*. The six *Selaginellas* from Mr. J. Cook and Mr. W. King were good specimens of even size.

The groups arranged for effect were a great feature, and in the open classes Mr. May, gardener to F. C. Jacomb, Esq., Cheam Park, a well-known orchidist, was awarded the chief honour with a meritorious group in which *Lilliums*, *Begonias*, *Cattleyas*, *Phalenopsis*, *Odontoglossum Alexandræ*, the bright *Epidendrum vitellinum*, and *Oncidium Kramerii* were arranged with Ferns and foliage plants. Mr. King was a close second with a very light and tasteful arrangement. In the corresponding class for local gardeners, Mr. W. Rogers, gardener to J. Flemwell, Esq., Sutton, had the best, which contained plants of *Hydrangea paniculata grandiflora*, with large showy heads of bloom, *Lilliums*, small and well-coloured *Crotons*, the whole finished with Maidenhair Ferns and *Panicum*; Mr. J. Cook following with a pretty group, his most telling plants being a well-flowered *Vanda tricolor*, *Cypripediums*, *Oncidium Lanceanum* and *O. flexuosum*, with light *Aralias*, *Cocos*, &c.

Two good banks of Tuberous *Begonias* were set up by Mr. W. Rogers and Mr. C. Keel, gardener to W. Petley, Esq., Worcester Lodge, and the prizes were awarded in the order named.

Large and grandly flowered *Fuchsias* were shown, the half dozen from Mr. S. Broughton gained him an easy first prize. Mr. J. Slater, gardener to Mrs. Hulse, Carshalton, was second with smaller but well bloomed specimens. Mr. Broughton was also the most successful for six Balsams. For a similar number of double Ivy-leaved *Pelargoniums* Mr. W. Rogers secured first honours with well-grown plants. Mr. G. Smith, gardener to G. Orme, Esq., had the best four double Zonals and also the best six singles, all of which reflected great credit on the grower. *Gloxinias* and *Begonias* were well represented.

The competition for Mr. E. Morse's prizes for twelve bunches of hardy herbaceous flowers was good, Mr. W. Slade, gardener to G. Foster,

Esq., having a superb stand and good variety. Mr. A. Carter, gardener to Alderman Evans, Ewell, also had an extremely pretty exhibit. For twenty-four varieties of cut flowers Mr. T. N. Penfold and Mr. C. Gibson of Chrysanthemum fame divided the honours, both having choice selections. Dahlias were well shown by Messrs. Carter, Slater, Broughton, Cook, Penfold, and W. Jupp, gardener to Cuthbert Johnson, Esq., Croydon, the latter taking several prizes in other classes.

Several good stands of Roses were exhibited, Mr. Broughton and Mr. Gibson having the best twenty-four. Mr. Broughton also had the best twelve blooms. For a hand bouquet Mr. T. Butcher, Croydon, was an easy first, having an arrangement of choice white blooms, with *Lælia elegans* mounted above. Miss King, Wallington, and Mr. T. Hogg, Sutton, also had very creditable productions. Sprays and button-holes were very good.

Three pretty designs for the table were arranged by ladies, Mrs. Bacon being first and Mrs. Bantry second, and one from Mrs. Petley was highly commended.

Fruit and vegetables were well represented, the latter being remarkable for the number of entries, which were good, especially the collection of six varieties of Potatoes. The Judges perhaps had more difficulty in deciding the awards in this class than in any other in the Show. Those from Mr. C. Blurton, gardener H. Cosmo-Bonsor, Esq., Kingswood Warren, were finally declared the best; Mr. V. Vickery, gardener to G. Steer, Esq., Wallington, second. Mr. C. Osman, South Metropolitan District Schools, was third, an extra prize being awarded Mr. J. Cook. The others were good. Messrs. Sutton & Sons' prizes for a collection of vegetables went to Mr. Osman, Mr. G. Woodham, Model Farm Gardens, North Dulwich, and Mr. S. Broughton in the order named.

Grapes were fairly well shown. The best Black Hamburgs came from Mr. Slater, Muscats from Mr. Penfold, and Messrs. Blurton had the best Buckland Sweetwater and Madresfield Court. Messrs. Cheal & Sons offered a prize for the best collection of fruit, this being secured by Mr. Woosfold, Messrs. Smith and Carter taking second and third prizes. The classes for single dishes of fruit were all well filled except that for Apricots, only one lot being staged: The amateurs were fairly represented, Mr. E. Wilkins, Sutton, being one of the most successful.

The cottagers were in strong force, and their produce was of great excellence. The prizes offered for bouquets of wild flowers for children brought nearly ninety exhibitors, and great taste was shown in the arrangement of most of them.

There were several trade and other exhibits not for competition. Mr. C. Osman had an interesting stand of ornamental Gourds and the pale Mont d'Or runner Bean. Messrs. Cheal & Sons had Cactus, single and double Dahlias, backed up with a collection of choice plants from Mr. E. Morse, Epsom. Messrs. J. Laing & Sons had a charming group, including choice single and double Begonias, the pretty *Saxifraga sarmentosa* tricolor superba, and a new white *Antirrhinum*, together with boxes of Rose blooms and Dahlias. Mr. T. Silence, gardener to W. R. G. Farmer, Esq., Nonsuch Park, exhibited a fine dish of Sutton's Perfection Tomato.

Mr. J. Box, Croydon, had a stand of useful horticultural sundries and a group of plants artistically arranged. From Messrs. J. Peed and Sons, Streatham, came a beautiful group of plants edged with herbaceous cut flowers, boxes of Roses, &c. They also showed large examples of Webber's Early White Potatoes. Seven pounds were planted by them last spring, and when lifted the produce weighed 222 lbs.

DUNMORE EAST HORTICULTURAL SHOW.

THIS is an annual event, taking place on the 15th August ("Lady Day," and in Ireland a holiday); and is always of considerable local importance. This year there was an additional attraction to sightseers in the presence of the Channel and torpedo fleets, the latter having Prince George of Wales on board—all anchored in the bay, in front of this fashionable small watering place. Prince George came ashore along with the sailors, talked freely with the people, and mixed with them, quite unattended by any state surroundings, and it is amusing to hear the stories told by the people of his affability, and their surprise when they found they had "a real live prince" among them without any of the usual imposing retinue. The Society, now many years in existence, is under the presidency of the Hon. Dudley Fortescue, Summerville, and an excellently constituted Committee, comprising the local clergymen of each denomination, half proprietors and half gardeners, with the Rev. J. D. Forde and Mr. Harvey as the official Secretaries. It is to be hoped when the present state of tension among classes in Ireland passes away each town, nay village, will have their horticultural show, with a somewhat similarly constituted Committee as in England and Scotland. There were sections for plants in pots, cut flowers, fruit, and vegetables, with a children's class for pupils of the national, convent, and church day schools, and an outdoor window garden department. A detailed account of each of those sections, with the first and second prizewinners in each, would occupy more space than you are likely to be able to afford, so I shall content myself by merely saying that the various exhibits from year to year, by honest emulation, show a steady improvement, thus benefiting, contrary to an occasionally expressed opinion, both the employers and the gardeners. In plants, cut flowers, fruit, and vegetables among the principal prizewinners was the President, the Hon. Dudley and Lady Camilla Fortescue (gardener, Mr. J. A. Calthorpe), Summerville, whose fine marine residence I recently tried to describe in the Journal; Mrs. Malcomson of Villa Marina, Dunmore East, and

Ballinakill, Waterford (gardeners, Mr. Dunphy and Mr. Noonan); Lady Carew, Woodstown (gardener, Mr. O'Brien); Sir R. Paul, Ballyglan; Messrs. White, Strangman, Mrs. Jacobs, &c., Waterford, with many local competitors.

Messrs. Saunders' Collections, Friars Walk Nurseries, Cork.—These were among the great attractions of the Show, and embraced stands of Roses, Hybrid Perpetuals, and Teas; Tuberous Begonias, single and double; Show and Fancy Dahlias; and a further stand of forty-eight trusses of single and double Zonal Pelargoniums, all distinct varieties. A special feature of the firm was a large stand of hardy outdoor flowers, which included *Gaillardia maxima grandiflora*, *Alstromeria aurea*, *Aconitum superbum*, *Phygelia capensis*, *Montbretia Potsi*, *Agapanthus umbellatus* (perfectly hardy at Cork), *Campanula pumila* (very fine), *Helianthus multiflorus*, *Lobelia cardinalis rubra*, *Francoa appendiculata*, *Hyacinthus candicans*, *Delphinium formosum*, and *Anemone Honorine Jobert*. These were well grown and shown, and as hardy flowers are so seldom patronised at local shows, it is worth specially noticing what we may have. The Dahlias were wonderfully fine for the time of the year, showing the advanced climate of the south of Ireland; but the following double Begonias excited just admiration:—*Blanche Duval*, *Felix Crousse*, *Pavillon Jaune*, *Madame Dumest*, *Madame Marie*, *Candidissima plena* and *virginialis* (both desirable whites), *Fleur de Thé*, M. Paul Vig, and *Louise Goussaincourt*. These were not for competition, and were awarded a first-class certificate by the Judges.

The exhibits were arranged in a large marquee, about 100 yards long, with an adjunct for the Judges and the press, under the immediate superintendence of the Rev. J. D. Forde, and many of those were of exceeding merit, especially in the stove and greenhouse plants from Summerville, Woodstown, and Villa Marina; the fruit from Ballinakill and Summerville; and the vegetables from Ballyglan. Crowds gathered in the town during the day, and divided their attention among the Show, the unrivalled marine scenery, and the naval fleet. The Judges, press, and officers were entertained at the palatial residence of Mrs. Malcomson, Villa Marina, the former being Mr. John Crehan, Minella, Clonmel; Mr. H. Crawford, Kileronagh; and your correspondent.—W. J. MURPHY, Clonmel.

CRYSTAL PALACE.—AUGUST 17TH.

AN extensive Show was opened in the Crystal Palace, Sydenham, on Saturday last in connection with the various Co-operative Societies in Great Britain. It was advertised as a "flower show," but it would have been more appropriately termed a "vegetable show," as the exhibits in the latter classes largely predominated, and very rarely is such a representative display of produce from small gardens seen in metropolitan exhibitions. There were altogether about 4000 entries from 350 competitors, and the entries ranged up to as many as ninety in some of the classes, giving the Judges plenty of scope for the exercise of their powers of selection. The whole of the central portion of the two naves was devoted to the Show, and the exhibits were arranged on tables at short intervals, the groups of plants between assisting to diversify the appearance of what would otherwise have been rather flat and monotonous.

The schedule enumerated 230 classes, 115 being in section 1 for members of industrial co-operative societies, and the remainder were for gentlemen or their gardeners, members of the Association. In the first section the prizes ranged 30s. to 2s., and some of the classes eight prizes were offered. The collections of vegetables were of most creditable quality altogether. Beans also were largely and well represented in all sections. Potatoes had four classes devoted to them, and the tubers were generally very satisfactory in appearance. Currants, Onions, Shallots, Tomatoes, Vegetable Marrows, Turnips, Cabbages, Parsnips, and Cucumbers were all well shown, but Celery, Leeks, and Peas were not in first rate condition, the last named being mostly too old.

In the cut flower classes those for annuals brought numerous competitors, Asters, Phlox Drummondii, Zinnias, Marigolds, Godetias, Tropæolums, Sweet Peas, Coreopsis, Echecholtzias, Clarkias, and Mignonette being chief favourites and the best represented. Bouquets were fairly good and varied in character, but a trifle too crowded in most instances, a common fault in shows of this kind. In the classes specially for particular flowers the most numerous were Stocks, Asters, French and African Marigolds, the latter especially fine. Phlox Drummondii, rather spoiled by being shown in stands and with paper collars. Petunias had a poor effect staged in the same way. Mignonette was good, also Dahlias, Zinnias, and Roses for so late a period; Gladioli bright but small spikes; Heliotrope was good, also *Helichrysums* and Sweet Peas, the last named being excellent; *Antirrhinums* were poor; *Amaranthus* is not fitted for exhibition, and Hollyhocks were unfortunately far behind what used to be seen some years ago even in small shows. The plants in pots did not constitute a satisfactory feature, few were equal to those seen at an average cottagers' show. Fruit, comprising chiefly Gooseberries, Plums, Raspberries, Black, White, and Red Currants, and Apples with a few Pears were all creditable samples.

In section 2 the vegetables were excellent the collections particularly so, Messrs. Waite, Beckett, and Phillips securing the leading prizes. For a collection of fruit Mr. L. Budworth, gardener to C. Hill, Esq., was first with black and white Grapes, Plums, Cherries, Nectarines, Peaches, and a Melon, Mr. Waite and Mr. J. Butler following closely. Cut flowers were also good in this section, and much more varied in character than in the other classes.



FRUIT FORCING.

MELONS.—Let the last plants be placed out without delay. Preserve the leading shoot until it reaches two-thirds across the trellis, pinch out the point, rubbing off the laterals up to the trellis, and then every alternate one on the opposite sides of the primary. Maintain a temperature of 65° to 70° at night, and 70° to 75° by day, 80° to 85° from sun heat, closing early so as to increase to 90° or 95°. Stopping the laterals should not be practised unless the plants are weak and they do not show fruit at the second or third joint. Weakly plants must have the first shows of fruit removed, relying on the sub-laterals. Early ventilation with plenty of light is essential to thoroughly solidified growth.

Pits and Frames.—The latest plants in these are swelling freely. Earth up the roots if necessary, but late plants on dung beds do not require a large amount of soil. Close early, affording the needful supplies of water at that time, keeping laterals well in hand, not allowing them in any way to interfere with the principal leaves. If the weather be dull afford good linings and admit a little air, as nothing is so fatal to Melons as a close atmosphere. Sprinkling should only be practised on fine afternoons. If black aphides attack the plants fumigate on two or three consecutive evenings moderately. Examine frequently for canker, and promptly apply quicklime to the affected parts. Gradually withhold water at the roots and moisture in the atmosphere from plants ripening their fruit, and if a little extra heat is afforded by means of linings so as to admit of a free circulation of air, the quality of the fruit will be enhanced considerably. Damp weather is very disastrous to fruit ripening. The fruit should be raised well above the soil and foliage, keeping it clear, and to prevent moisture condensing on the fruit admit a little air constantly. In a close moist atmosphere the fruit swells freely enough, but when it is ripening often becomes cracked and decayed.

CUCUMBERS.—Encourage the plants for autumn fruiting to make strong growth by adding fresh soil from time to time, affording plenty but not too much water at the roots, with a moist genial condition of the atmosphere by syringing at closing time and damping available surfaces occasionally. Sufficient fire heat must be employed to prevent the temperature falling below 65° at night, and to maintain it at 70° to 75° by day. Old plants should have the exhausted growths cut out, and others where likely to be crowded thinned, so as to admit light and air, securing a sturdy solidified growth and a succession of bearing wood.

The syringe should be regularly employed about 3 P.M., and if mildew appears dust with flowers of sulphur in the evening whilst the foliage is damp, maintaining a somewhat freely ventilated atmosphere. Black aphides are often troublesome. These and green aphides succumb to repeated fumigation with tobacco, taking care to have the foliage dry, the smoke cool, and to ventilate freely the following day.

PEACHES AND NECTARINES.—*Planting or Lifting Trees for Early Forcing.*—If new houses have to be filled, and fruit is wanted next season at an early period, plant the trees as soon in the late summer or early autumn as the growth is perfected, the wood and foliage being ripe and the buds plumped. The most suitable trees are those that have been two or three years trained to walls, and have been lifted annually or biennially. Those intended for moving to houses to be started early ought now, if there is any tendency to a late growth, or any doubt as to the maturity of the wood and buds, to have the soil taken out as deeply as the roots one-third the distance from the stem that the trees extend, and the trench so made should remain open for a fortnight or three weeks, when it may be filled again, care being taken that the trees have sufficient water whilst the trench is open. All that is necessary, however, is to prevent severe flagging. This will effectually check the growth and ensure ripening, whilst it will materially assist lifting with a ball or mass of fibrous roots. Plant the trees for early forcing by the end of September, and commence lifting early forced trees as soon as the foliage gives indications of falling. It will not matter about a few eappy laterals, the softness will tend to the manufacture of roots. Soil should be obtained in readiness, so that work of this kind can be performed with the utmost promptness and despatch. Provide clean drainage too in different sizes. The soil may consist of any good loam, preferably strong and calcareous, nothing being lacking in the top 3 or 4 inches of an old pasture overlying limestone or chalk, and if intermingled with flints all the better. Such will grow Peaches and Nectarines to perfection without any admixture. If the loam be at all light add a sixth of marly clay as finely divided as practicable. Any deficiency of calcareous matter may be overcome by an addition of chalk to sandy soil, and of lime rubbish to heavy soil. New borders must have efficient drainage, the bottom of the border being concreted if the soil beneath be unfavourable, or better laid with bricks on the flat run with cement, the border being further enclosed with walls, so as to confine the roots. A border one-third the width of the trellis will be sufficient in the first instance. It is essential that the drains

have proper fall and outlet, rubble being placed over them a foot thick, the roughest at the bottom and the finest at the top, and if covered with a layer 2 or 3 inches thick of old mortar rubbish the drainage may be considered sound for an indefinite period. Twenty-four inches depth of border is ample. The best varieties for early forcing are Alexander; Waterloo, a high-coloured and taking fruit of high quality, but unfortunately a clingstone; Early Rivers, which, however, is liable to split at the stone; and Early Beatrice. All points considered the best of the four is Alexander. Where extreme earliness is not considered the finest varieties for early forcing are Hale's Early, Early Alfred, Royal George, or preferably Stirling Castle, and Grosse Mignonne, which are free setters, and good alike in appearance and quality. Of Nectarines Lord Napier is superior, and when properly thinned swells to a large size, and finishes very satisfactorily. Both Elruge and Violette Hâtive are suitable to continue the succession, being in every respect excellent.

KITCHEN GARDEN.

SOWING AUTUMN ONIONS.—We have sown these from the 1st of August until the end of September. The former were too early and seeded before bulbing in spring, while the latter were too late, but if sown about the end of August they are right in every way, and this is now our usual time of sowing. The common types sown at this time are the Giant Rocca and Tripoli, but any of those generally sown in spring, such as James' Keeping, Rousham Park Hero, and others of this class may also be sown now, and they will form excellent bulbs before the same sorts sown in the spring months. All ground for autumn sown Onions should be rich in lime and manure. Then there is no danger of failure from grubs, and the bulbs will become large and good. The seed may be sown broadcast, but we prefer rows, and always sow in this way. The ground should be forked over, broken and cleaned, and the drills may be opened to a depth of 2½ inches at a distance of 10 inches or 1 foot apart. As soon as the soil has been placed over the seed tread it well down, and when the surface is so dry as not to be sticky the hand roller may be taken over it with advantage, as a firm soil is highly conducive to the production of sturdy plants that seldom fail to stand the winter well.

HARVESTING SPRING-SOWN ONIONS.—The present is a good Onion year. The bulbs we have seen at shows and elsewhere have been remarkable for their size, symmetry, and firmness, but they will not improve much after this time, and as long as the weather is good they may be drawn up and dried with the view of storing them for the winter. If the majority of the plants have thick necks begin by pressing these over close to the bulb. Let them remain in this form a week, then draw them and lay them down on the surface of the ground where they have been growing with the bulb facing the sun. After a week in this position they may be removed and placed under cover, but in a light airy place, and there they should be spread out in a thin layer and allowed to dry further without taking the tops off. These will soon dry, and they may be cleaned any time afterwards: with us this is work on a wet day. If Onions are intended for tying in strings the stems should be left about 6 inches in length, but if they are only to be laid up in a heap the stems may be cut close to the bulb. Where pickling Onions are deficient the smallest may be picked from the main crop and used for this purpose.

CHIRK CASTLE TURNIP FOR WINTER.—This is our favourite variety for use from December onwards, and all who value a good Turnip in winter and spring should grow it. As is well known to all who have cultivated it, the skin is jet black and the flesh snowy white. The quality is first rate, and as the bulbs bury themselves well in the soil this no doubt accounts for their remaining so good all through the winter and in the most severe weather. Ours have just been thinned, but there is still time to sow the seed with the certainty of securing useful bulbs.

THE LATEST CELERY.—Through all quarters being full of summer crops we were unable to plant the whole of our Celery for the latest supply at the usual time, and it is only now some hundreds of plants are being placed in the trenches. These are mostly where Pea rows have been, and as the ground was well manured for the Peas it has not received any now, but shallow trenches are formed and the Celery planted. We do not expect it to become large, but it will attain a useful size before November, and it will be much hardier in winter than that which has been forced into a large size by early planting and a rich soil.

OLD CABBAGE PLANTATIONS.—We regard the old Cabbage plantation as one of the most valuable stores of winter greens we possess. It is astonishing the number of small heads supplied from it throughout the winter, and on until the new Cabbages are almost ready again. We have known times when many of the winter Broccoli and other greens were killed and the Cabbage sprouts drooped as if they would never rise again, but as the season advanced they sprung up and yielded a copious supply of tender and well-flavoured vegetables. It is therefore to the advantage of all to give them attention, and they should all be examined, the decayed leaves removed, the large weeds pulled out, and the whole surface freely and deeply stirred with the Dutch hoe.

LATE KIDNEY BEANS.—Although all vegetables are so plentiful at present it must be remembered that the time will soon be here when they will quickly become scarce, and attention should now be directed to carry on the supply as late as possible. The best way to do this is to limit the supply at present, and retain the vigour of the plants for later fertility. This practice applies to many crops, but to none more than to Runner Beans. These have been wonderfully fruitful of late. It

is years since we had them so prolific and good. The pods have formed much more quickly than they could be used, the supply has far exceeded the demand, but the pods that are now filling with seed will effectually prevent the later ones forming or swelling, and the seed will soon cause the plants to cease bearing. To allow this to occur would be a great mistake, and it is best to gather the whole of the old pods, allowing none to remain when they have become too old for the table, and the late blossoms will form into pods that will be excellent until they are cut down by frost.

THE PEA SEASON.—While the season now fast passing has suited the majority of vegetables, it has been an admirable one for Peas. The quantity and quality have been excellent, and is still good, and the latest crops are very promising, but as these are influenced considerably by the weather, and are apt to be deficient if the autumn prove unfavourable, the utmost attention should be given them. See that they are all well staked; do not allow any of the stems to bend over for want of support, as on the part beyond the pods will fail to fill. Should very wet sunless weather occur and they are disposed to run to growth, pinch the points out, as this will induce the bloom buds to form. At the same time see that they do not suffer from drought, and if there is any danger of this water copiously with liquid manure before they are far advanced in fruiting, as good feeding is necessary to make the pods fill late in the season. When the fruit is finished the birds are apt to turn their attention to the Peas, and it is often necessary to place nets over them to protect the pods.

PLANT HOUSES.

Pa'ms.—Where these are infested with small scale every endeavour should be made to clean them. This scale is easily destroyed with petroleum and water, but great care is necessary in its application. The oil drains into the centre of the plant, and often proves injurious if strong applications are used and the plants stood upright again directly they have been syringed. Three ounces of the oil may safely be used to each four gallons of water, but the first application will not destroy all the scale; it may have to be repeated three or four times in succession at intervals of a fortnight. The best way to syringe Palms with this solution is to slightly incline the pot so that the stem and fronds of the plant hang downwards. This prevents any oil reaching the centre. The leaves, if possible, should not be allowed to touch the ground, or they may be injured by the oil that collects and floats on the surface of water on the floor. The best plan is to move the plant to a fresh position as soon as it has been syringed, so that its leaves are free from the floor.

Cissus discolor.—For covering the back wall of a stove or other warm house few plants are more beautiful. The main branches of the plant should be trained at the top, so that all the young growths will hang downwards in a natural manner. When trained under the roof and well treated it grows so rapidly that it quickly forms a dense shade. From time to time liberally but judiciously thin the shoots, so that a good per-centage will hang in a natural manner. This plant does not display half its true beauty when trained in a stiff formal manner. With good treatment and liberal feeding it will continue to grow until the end of the year. Perhaps at no season does it look more beautiful than during the sunless days of autumn. The foliage can then be used with advantage for many forms of decoration.

Bertolonias.—Side shoots may now be taken off, as they root freely in sphagnum moss and sand in a close propagating frame, or under bellglasses in the stove. A few tops may also be taken and rooted, so that cuttings will be produced for next year's stock. Young plants rooted now pass the winter in better condition than plants with large well-developed foliage. The latter are almost certain to damp.

Aralia leptophylla.—Specimens that have grown too tall for use in 5 or 6-inch pots may be cut up at once for yielding suitable decorative plants in spring. If the old plant is cut off close to the soil it will break again into growth, and in due time make a good specimen again. The remainder of the stem should be cut up into lengths of a little more than 2 inches, and inserted singly in small pots in sandy soil. If plunged in the propagating frame and shaded from the sun all will form roots and break into growth from the top eye. At the first potting afterwards the portion of old stem above the soil in the small pots can be buried. Plants required for decorative purposes during the autumn and winter becoming too tall in their present quarters should be gradually hardened and given cooler treatment for a time.

Ananassa sativa variegata.—A few well grown plants are worth a place in a stove on account of their distinctive character and striking appearance amongst other plants. To produce good plants quickly leave the suckers upon the parent until they are sufficiently strong for 5 or 6-inch pots. If inserted in sandy loam they will root freely enough arranged in the stove with other plants. The only defect in this plan is that the soil is liable to get wet before it is filled with roots. Where practicable, it is a good plan to plunge the pots, covering the surface of the soil and rim of the pots with the plunging material until they are well rooted. By this means no water will be needed before roots are formed if the soil has been moderately moist at potting time. If suckers are not freely produced before the plant fruits there is no difficulty in getting the necessary quantity afterwards.

Anthericum variegatum.—In from 4 to 6-inch pots few plants are more conspicuous in appearance or more useful for various forms of decoration. This plant will certainly thrive in a cool house, but it grows much more quickly in heat, and young plants should be treated to nearly stove heat until they attain a decorative size. Under cool

treatment the plant is very slow, but in heat suckers are produced much more quickly. It is necessary to grow the stock plants moderately warm for this purpose. It grows freely in good loam, sand, leaf mould, and one-seventh of manure.

Tillandsia (Vriesia) hieroglyphica.—For rooms and various forms of decoration this plant might be grown much more generally, for few, if any, plants last in rooms in good condition for the same length of time. For this purpose propagation by suckers is too slow, and therefore seedlings should be obtained. Hitherto we have failed to save seed, but found no difficulty in having seedlings obtained for us. This plant requires 4-inch pots, and grows freely in loam, peat, leaf mould, and sand. Plants in this size are very effective when from 6 to 8 inches high, especially if a few small seedling Ferns and dwarf mosses have been established on the surface of the soil. They require stove heat, but after they are large enough they will stand for weeks in any structure without injury.

THE BEE-KEEPER

NOTES ON BEES.

TIERED HIVES.

"WHILE tiered hives are undoubtedly the largest producers, still it is a loss to attempt frustrating the swarming mania, and as swarms always work the best we should take them the first opportunity and make the most of them." This is the concluding paragraph of an article in the Journal, and one to which many will, in my opinion, take great exception, and therefore in order to prevent what appears to me to be a wrong impression from being circulated it is necessary to consider the meaning of these words, which in themselves, taken in separate sentences, and not as one whole collective paragraph, are absolutely true, yet when taken together convey an opinion that it is quite impossible for me to endorse even by silence. That tiered hives are the largest producers is an undoubted fact, and the loss and folly of attempting to prevent the issue of a swarm when once a stock has determined to throw off its surplus population is as certain, while nobody will for one moment deny that swarms work with more energy than an old stock. All this is true, but the question is whether in hives managed skilfully on the "tiering" system the swarming mania ever arises at all, because the main object of this system is by giving sufficient room to prevent any desire to swarm, not letting the desire arise and then attempting to crush it. By the tiering system not only is more honey produced, but the greater quantity is produced at less trouble and expense, while the quality is not by any means inferior. If a stock throws off a swarm the best use possible must be made of it, and it is not wise to attempt to return it, although a cast may alike with ease and certainty be returned upon the day of issue with profit to the owner unless in somewhat exceptional circumstances.

STEWARTON HIVE.

Last autumn I procured one of these hives, but was at the time unable to stock it. Eventually, however, after driving a skep which weighed 96 lbs., the bees were, together with some driven bees from some other hives, placed in the boxes, and now form a strong and valuable colony.

FEEDERS.

On hearing a man who occasionally looks after some stocks in the absence of their owner complain about the trouble he had in feeding in autumn with the ordinary round tin feeder, I had what appears to be an evident improvement made in one of them, and so satisfied was he that he said that "feeding was now a pleasure." I give the idea for what it is worth, although quite possibly the principle upon which it is constructed may be very old, and many such feeders be in use already. The difficulty he experienced was this, that when he lifted the tin cover to pour in the syrup the bees rose and occasionally attacked him, much to his sorrow and discomfort. I had therefore a funnel attached to the outside of the feeder with a connection into the feeder just below the "wooden float," so that the syrup would, entering beneath the float,

gradually raise it without touching the bees. The level of the syrup in the funnel outside is the index of the level inside, so that any child can take a can and fill the tin, covering up the funnel with a small piece of zinc or tin, and not a bee escapes, nor is there any necessity to move the lid of the feeder until it is desired to close up the hive at the conclusion of the feeding. This contrivance may with ease be attached to the ordinary feeder by those who have experienced a like trouble in former years.

THE SEASON.

Results this year seem to have been fairly satisfactory, for while white Clover was in bloom the bees had now and then an opportunity to collect in quantity, although in this district the weather has never been so continuously favourable as to admit of a large harvest being stored, except in the case of those who took pains to always have their stocks in readiness for the honey flow. From tiered stocks I have had from seventy to eighty 1-lb. sections apiece of good quality, but the largest sized skeps seem never to have really appreciated the amount of honey waiting to be gathered; but although not giving any great weight of super honey they are heavy and will yield a good return, the honey from the one driven a few days ago being of splendid quality and colour.

SELLING.

My advice to bee-keepers is to sell their honey as soon as they can get a reasonable offer; but what "reasonable" means must be left to the individual to discover, because what would be an excessively low price in one place seems to be considered a fairly good one in a locality less favourably situated for the disposal of bee produce. It is a mistake to hold over in the hope of a rise in the market anything of such a very perishable nature as honey in the comb, unless in exceptional cases. Neatness, cleanliness, and quality are the great essentials to packages of honey, and for a good quality, especially of Clover honey, there appears to be a ready market at prices varying from 1s. to 1s. 3d. a pound. These prices will leave the producer a large margin of profit on all well-managed stocks, and those who have not taken sufficient care to produce honey in quantity must, as the result of their prior neglect, see their more energetic neighbours making profit while they are estimating their loss or vainly attempting to form a favourable balance sheet. Run honey should be bottled in vessels with good wide mouths, not narrow necks like so many of the bottles of honey put up for sale. When the honey is granulated it is most difficult to extract it from such jars, upon which the ingenuity of the maker seems to have been specially spent in order to prevent the unfortunate possessor from getting out of them with ease and comfort whatever for the time being they may happen to contain. Pretentious labels are an eyesore; prettiness combined with simplicity is much more to be admired than a gaudy monstrosity out of taste with the vessel and its contents.—FELIX.

PUNIC BEES.

"A LANARKSHIRE BEE-KEEPER," page 121, asks if I have noticed these bees working very early in the morning. I thought that I had in my previous articles said or implied as much, when I said that they work concurrently with the humble bees; that is, the pure race. I have not had much experience with their crosses yet. They begin work at "peep 'o day," and before the sun begins to show above the horizon they are at full swing carrying in pollen, &c. The best stock of bees I have at present is one with a pure mated queen that has built up from a two-frame nucleus since spring.

I have been very busy this summer investigating the reason bees swarm. They have repeatedly swarmed without a queen in the hive, and they have swarmed time after time with only a virgin queen in and no means of rearing a successor. Several times I have removed the old queens and a few bees; firstly, to prevent swarming; and secondly, to make up a nucleus, and in each case they and their bees went back to old stock and then led off large prime swarms. Neither plenty of space, both below and above frames, would prevent them swarming; but for all that I do know of two plans that will prevent bees getting into the "swarming fever" and yet keep them as strong as possible. I have also been able to get demonstrative proof of the use of fertile workers in the economy of Nature. I have always been sure that Nature had a reason for them, but it was not until 1886 that I got any indication what their existence was for. Since then I have been on

the look out for absolute proofs, or the means to get such, and at last I have succeeded, thus solving an enigma that has been a puzzle to naturalists for 100 years.—A HALLAMSHIRE BEE-KEEPER.

EXHIBITION OF HONEY AT THE CRYSTAL PALACE.

THE National Co-operative Flower Show was held in conjunction with the Festival at the Crystal Palace on Saturday last, August 17th.

A section of the Exhibition was devoted to honey and wax, the British Bee-keepers' Association giving silver and bronze medals, and, at the request of the Co-operative Societies, appointed the judges in this department—Mr. John M. Hooker and Mr. Alfred Neighbour. The following are the awards:—

For the best collection of comb and extracted honey, staged on a space of 6 feet by 2 feet 6 inches.—First prize, of 50s., Mr. Baldwin, Bromley. Second, of 30s., to Mr. Cudd of Chislehurst. Third, of 20s., to Mr. Dance of Halstead, Essex. The first and second taking the medals of the B.B.K.A.

For twelve 1-lb. sections of comb honey.—First, of 20s., to Mr. P. Hills, jun., Great Baddow, Essex. Second, of 15s., to Mr. Thos. Duncomb, Horsham, Sussex. Third, of 7s. 6d., to Mr. S. Bailey, Horsham. Fourth, of 5s., to Mr. Baldwin. Fifth, of 2s. 6d., to Mr. H. Kerridge, Ipswich. Highly commended, Miss A. M. Runcieman, Chelmsford, Mr. Potter, Braintree, and Mr. Geo. Cole, Braintree.

For twelve 1-lb. glass bottles or jars of run or extracted honey.—First, of 20s., to Mr. Wm. Nott. Second, of 15s., to Mr. Wm. Newman, jun., Great Baddow. Third, of 7s. 6d., to Mr. A. Jones, Gloucester. Fourth, of 5s., to Mr. Prentis, Grays, Essex. Mr. P. Hills, jun., highly commended.

For the best British wax from the exhibitor's own hives.—First, of 10s., to Mr. Thomas Dance. Third, of 5s., to Mr. H. Kerridge.

For honey in applied forms.—First, 10s., to Mr. H. Kerridge, for mead. Second, of 7s. 6d., to Mr. Dance, for mead. Third, of 5s., to Mr. H. Kerridge, for vinegar made from honey.

The comb honey in sections, with the exception of the first three prize lots, was not so good as we should have expected to have seen it. Exhibitors have yet to learn how to get the corners filled.

The exhibits of extracted honey were a very fine lot, for the most part beautifully clear and bright coloured. The exhibits of honey were sent from Bedfordshire, Berkshire, Gloucestershire, Kent, Essex, Norfolk, Suffolk, Surrey, Sussex, and were a great improvement for quality and quantity on former years.

Thanks to the British Bee-keepers' Association this industry is now better understood, and purer honey is now obtained, than was formerly the case when the wasteful practice of smothering the bees and draining the honey from the broken combs of honey and brood altogether.

TRADE CATALOGUES RECEIVED.

E. P. Dixon & Sons, Hull.—*Autumn Catalogue of Flower Roots.*
Dobie & Mason, Deansgate and Oak Street, Manchester.—*Catalogue of Hyacinths, Tulips, Crocus, &c.*
Sutton & Sons, Reading.—*Catalogue of Bulbs, 1889.*
B. S. Williams, Upper Holloway.—*Catalogue of Bulbs, Fruit Trees, Roses, &c.*
John Peed & Sons, Roupell Park Nurseries, Norwood, S.E.—*Bulb Catalogue, 1889.*
J. Carter & Co., High Holborn.—*Bulb Catalogue, 1889.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Judging Picotees (J. W.).—The schedule you sent has not helped to elucidate matters very much, as the class provides for "Pinks and Picotees," and if we remember rightly the former were not mentioned in your previous letter. However, the principle upon which you acted

is the correct one, failing any stipulation that distinct varieties are required.

Heat for Old Vine (J. G.).—Though it would not be wise to commence forcing the old Vine with brisk heat in January, we should expect it to be considerably improved by the judicious application of fire heat, starting it steadily into growth towards the end of February or early in March, increasing the temperature in the usual manner with increasing growth. If the wood is not ripening a little fire heat now with very free ventilation and not a high night temperature might be considerable advantage.

Offensive Pond Water (H. J. P.).—As evidence of the danger of carbolic acid for plants, it is sufficient to say that an ounce of it mixed with a gallon of water is used for destroying weeds on walks. If you can char some thick pieces of wood—that is, convert them into charcoal, then throw them into the pond, your object may perhaps be attained, and the water remain as safe and good for the plants as before. Sulphate of lime (gypsum) is also good for the same purpose, and safe; and 1 or 2 per cent. of sulphate of iron (green vitriol) prevents water becoming offensive, and in that small proportion is not injurious to plants, but in some soils may be beneficial.

Removing Dahlias (E. G. N.).—Your plan may answer provided you cover the tubers with nearly dry sand, and keep it dry, in the coolest place you can find, as if warm and moist there would be a danger of the buds, which should remain dormant till the spring, pushing in the autumn. Under the special circumstances of the case it might be a good plan to drive a spade down just beyond the tubers and under them now, for cutting some of the fibres sufficiently to cause the leaves to flag a little, thus checking growth gradually instead of arresting it suddenly by digging up the plants when in full vigour. It does not follow that the position in which you cover the tubers after taking them up will be the best place for leaving them through the winter, and probably it will not. If you describe their condition in October we shall be glad to give further advice.

Cutting off Strawberry Leaves (Cambridge).—We are neither able to agree with you nor your gardener. We have seen Strawberries bear fairly well when all the leaves have been mown off after the fruit was gathered in early summer, but have not considered that as proof of the soundness of the practice so much as of the vitality of the plant and its power to recover from rough usage. When gardeners grow Strawberries in pots they endeavour by good cultural attention to produce the finest possible crops, and they know very well they would not succeed nearly so well as they do if they cut off the leaves. The better the foliage the finer the crowns and the heavier the crops. Our practice is to clear all runners and rubbish from Strawberries immediately after gathering, with the object of developing fine leaves under the full influence of the air, thus storing material in the crowns for the formation of strong flower trusses as the primary condition for fine fruit. We consider the right time for removing the old leaves, if a right time there be, is when they are quite withered in the spring. They are often of great service in protecting the crowns in the winter. We scarcely know which we least admire, the proposition of yourself or your gardener, but we should not like either of you to dress our Strawberries.

Unhealthy Vines (Amateur).—You are no doubt correct in surmising that the border is unable to afford the Vines the requisite support for maintaining them in a healthy state. If it is "wet and heavy," as you suggest, that alone is sufficient to account largely for their present condition, and it may be deficient in the constituents that Vines need as well. We could have formed a better opinion on the case if you had sent fair samples of the wood and stated the age of the Vines. If they are old as well as having "very few and very thin shoots, with the leaves dried up at midsummer," the best course to adopt would be to make an entirely new border and plant young Vines. These would not bear fruit next year, or it would be very unwise to allow them to do so, but a few strong fruiting canes, either grown in large pots or planted without materially disturbing the roots, would probably afford a better supply of Grapes than the old Vines are capable of producing, however they may be treated now. The crop of next year depends on healthy and matured growth of the present season; and if your Vines practically lost their leaves at midsummer, and the laterals are "very few and very thin," it is too late to change their condition this year. No doubt the Vines can be made to produce stronger growth and better foliage next year, which, with good management, might be retained till the autumn, and the following year (1891) better Grapes might be expected. But this would involve making a new border, and either the Vines would have to be taken up, laying their roots in soil, at the same time covering the canes and keeping them moist till a new properly drained border were ready for their reception; or the old soil could be forked out from between the roots and these surrounded with new soil, due provision being made for the escape of superfluous water. As we assume the Vines have few or no leaves, the work may be done at any time, or not later than the first week in September, taking care the roots are not dried during the process of border renewal, and it is desirable that the rods and canes be left moist also by syringing and shading. But if they are in the exhausted state your letter implies, and especially if they are old, the most satisfactory return for the labour and outlay would be derived from planting young Vines. Mr. Barron's "Vines and Vine Culture" is the most complete work on the subject; price 5s., post free 5s. 3d. from this office.

Naming Potatoes (Several Correspondents).—During the present week we have received several parcels of Potatoes containing from one to a dozen tubers of as many assumed varieties to be named. The senders of them have evidently forgotten or not seen the intimation that has been more than once published of our inability to undertake to name Potatoes. Tubers can be identified by comparison with collections at exhibitions.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (W. J. M., Hants).—The Pears are not in a condition to be named. 1 is perhaps Beurré Diel; 2, Beurré Clairgeau; 3, Jargonelle. (H. H.).—1, Beurré Giffard; 2, not known. We cannot name Plums without stalks or young shoots.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. C. B.).—*Spiraea Douglasi*. (W. R.).—1, *Adiantum decorum*; 2, *Asplenium viviparum*; 3, *Doodia aspera*. (A.).—*Eupatorium cannabinum*.

COVENT GARDEN MARKET.—AUGUST 21ST.

Market very dull, with large supplies. Prices all round lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and	2	0 to 4	Peaches, dozen	2	0 to 8
" Canada, per barrel	0	0 to 0	Plums, $\frac{1}{2}$ sieve	4	0 to 7
Cherries, $\frac{1}{2}$ sieve	0	0 to 0	Red Currants, per $\frac{1}{2}$ sieve	0	0 to 0
Grapes, per lb.	0	6 to 2	Bask	0	0 to 0
Lemons, case	10	0 to 15	St. Michael Pines, each	2	0 to 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 3	Lettuce, dozen	0	9 to 1
Asparagus, bundle	2	0 to 5	Mushrooms, punnet	0	6 to 1
Beans, Kidney, per lb.	0	2 to 0	Mustard & Cress, punnet	0	2 to 0
Beet, Red, dozen	1	0 to 2	Onions, bundle	3	0 to 4
Broccoli, bundle	0	0 to 0	Parsley, dozen bunches	2	0 to 3
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0 to 0	Parsnips, dozen	1	0 to 0
Cabbage, dozen	1	6 to 0	Potatoes, per cwt.	4	0 to 5
Capicums, per 100	0	0 to 0	" Kidney, per cwt.	4	0 to 7
Carrots, bunch	0	4 to 0	Rhubarb, bundle	0	2 to 0
Cauliflowers, dozen	2	0 to 4	Salsify, bundle	1	0 to 1
Celery, bundle	1	6 to 2	Scorzonera, bundle	1	6 to 0
Coloworts, doz. bunches	2	0 to 4	Shallots, per lb.	0	3 to 0
Cucumbers, each	0	3 to 0	Spinach, bushel	3	0 to 4
Endive, dozen	1	0 to 2	Tomatoes, per lb.	0	6 to 0
Herbs, bunch	0	2 to 0	Turnips, bunch	0	4 to 0
Leeks, bunch	0	3 to 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms	2	0 to 6	Lilium longiflorum, 12	2	0 to 5
Asters, per bunch, French	0	9 to 1	" blooms	2	0 to 5
" doz. 24, English	3	0 to 6	Maidenhair Fern, doz.	4	0 to 9
Bouvardias, bunch	0	6 to 1	" bunches	4	0 to 9
Carnations, 12 blooms	1	0 to 2	Marguerites, 12 bunches	2	0 to 6
" 12 bunches	3	0 to 6	Mignonette, 12 bunches	1	0 to 3
Chrysanthemums, dozen	1	0 to 3	Myosotis or Forgetmenots	1	6 to 3
Chrysanthemums, dozen	3	0 to 6	" doz. bunches	1	0 to 3
Clove Carnations, 12 bunches	4	0 to 6	Pansies, dozen bunches	0	6 to 1
Cornflower, doz. bunches	1	0 to 3	Pelargoniums, 12 trusses	0	6 to 1
Dahlias, dozen bunches	2	0 to 6	" scarlet, 12 bunches	2	0 to 4
Encharis, dozen	2	6 to 5	Pinks (various) 12 bunches	3	0 to 6
Gaillardia picta, 12 bunches	3	0 to 4	Poppies, various, 12 bunches	2	0 to 4
Gardenias, 12 blooms	2	0 to 4	Roses (indoor), dozen	0	6 to 1
Gladoli, per bunch	0	6 to 1	" Mixed, doz. bunches	3	0 to 6
Gladiolus brecheleyensis,	1	0 to 1	" Bed, dozen bunches	4	0 to 6
dozen sprays	1	0 to 1	" 12 blooms	0	6 to 1
Helianthus, or Sunflower,	3	0 to 4	" Tea, white, dozen	1	0 to 3
dozen bunches	0	6 to 1	" Yellow	2	0 to 4
" dozen blooms	0	6 to 1	Spiraea, dozen bunches	0	0 to 0
Lapageria, 12 blooms	1	0 to 2	Stephanotis, doz. sprays	2	0 to 3
Lavender, dozen bunches	4	0 to 6	Stocks, dozen bunches	3	0 to 6
Lilium anatum, 12 blms	2	0 to 4	Sweet Peas, doz. bunches	2	0 to 4
			Sweet Sultan,	3	0 to 4
			Tuberose, 12 blooms	0	6 to 1

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6	0 to 12	Fuchsia, per dozen	4	0 to 9
Arum Lilies, per dozen	0	0 to 0	Geraniums, Ivy, doz.	3	0 to 5
Arbutus (golden) dozen	12	0 to 24	Hydrangea, per dozen	9	0 to 18
Asters, 12 pots	4	0 to 6	Lobelia, per dozen	3	0 to 6
Begonias, various, per doz.	4	0 to 12	Marguerite Daisy, dozen	6	0 to 12
Balsams, per dozen	3	0 to 6	Mignonette, per dozen	3	0 to 6
Caladiums, per doz.	0	0 to 0	Musk, per dozen	2	0 to 4
Calceolarias, per dozen	4	0 to 8	Myrtles, dozen	6	0 to 12
Christmas Rose	0	0 to 0	Nasturtiums, per dozen	2	6 to 4
Chrysanthemums, dozen	6	0 to 15	Palms, in vac., each	2	6 to 21
Cockscombs, per dozen	3	0 to 6	Pelargoniums, scarlet, 12	2	0 to 4
Dracena terminalis, doz.	24	0 to 42	Pelargoniums, per dozen	4	0 to 9
Dracena viridiflora, doz.	12	0 to 24	Rhodanthus, per dozen	3	0 to 6
Erica Cavendishii, doz.	0	0 to 0	Saxifraga pyramidalis,	0	0 to 0
Erigeron, var. dozen	6	0 to 18	" per dozen	0	0 to 0
Evergreens, in var., dozen	6	0 to 24	Solanums, per dozen	6	0 to 12
Ferns, in variety, dozen	4	0 to 18	Spiraea, per dozen	0	0 to 0
Ficus elastica, each	1	6 to 7	" palmata, per doz.	0	0 to 0
Foliage plants, var., each	2	0 to 10			



POINTS OF GOOD HUSBANDRY.

CLOSE attention to trifling matters of detail is an important factor to successful farming. Take for example manure; about nothing is there greater diversity of opinion, yet all will agree that there is much carelessness and waste in the preparation and use of manure. Without great care huge heaps of farmyard manure cannot be made without waste, and such waste is best avoided by carting green manure straight from the yards upon the land and ploughing in at once. There is then no building or turning of manure heaps, no second carting, no loss of ammonia. The manure should of course be made under cover, which can easily be done, for a roof can be put to any yard for about 2s. 6d. per square yard—not of roof, but of the yard. Upon this basis a calculation of cost can easily be made, and it should be understood that durable roofs of comparatively slight material may be constructed provided stout supports are used with principal rafters, beams, and king posts 7 by 3 inches. We have recently had to reconstruct several roofs simply because substantial main timbers were not used in the first instance. On the home farm the Mangolds had green manure carted direct from the yard into the furrows, where it was spread, and at once covered by splitting the ridges with a double-breasted plough; the roots are already very fine, and the entire crop compares favourably with any upon our off-hand farms.

Adjoining the Mangolds is a field of Swedes, which well illustrated another good point of husbandry. This field gave a good crop of Barley last year, which was followed by a catch crop of Rye sown in September. The Rye was consumed in folds by ewes and lambs, the ploughs followed closely, and the Swedes were sown early very soon after the Mangolds. We thus gained the double advantage of an early green crop for sheep, and a sufficient dressing of manure for Swedes, which are a full vigorous crop, highly satisfactory. It will be understood that the Swedes were sown upon the flat immediately after the ploughing, in order that the moist soil might induce quick germination of the seed and a brisk growth, so that the young plants might soon be out of danger of injury from fly. The season has on the whole been so favourable for roots that full successional crops are now a certainty.

Lime dressing may be said to be a form of manuring, as lime is really a plant food. It is usually only recommended for clay and alluvial soil because it is so valuable an agent for opening up clay, and its action on vegetable matter is so vigorous and effective. We have also used it to great advantage upon sandy soils, as well as the thin silicious soil of the Hastings sand formation, and there is no doubt it is applied with advantage to all soil deficient in lime. About 3 tons an acre is a fair dressing, and it should be applied in summer to long fallows or bastard fallows. This is done at intervals of from five to ten years precisely according to the nature of the soil. It sinks in the soil more or less slowly, and a little observation will enable one to decide how often it should be used. To show what stress practical men put upon the importance of lime dressing, we may mention the remark of the "Royal" judges of a prize farm in Nottingham in 1888, that without regular periodical lime dressings it would probably be worthless—with them, under good management it was awarded a first prize. Of the action of lime in soil we may say that it sweetens it by neutralising organic acids; it tends to destroy excess of humus, and by its action on vegetable matter sets free ammonia, water, and nitric acid, which it takes up; it sets free potash and other alkalies, and renders harmless injurious salts.

These few scientific deductions are given because the popular idea of the effect of lime is very vague and indefinite.

It may also be said that there is a considerable degree of uncertainty about the use of all fertilisers, and it is matter for regret that farmers do not ascertain for themselves all about the wants of the soil and how to supply them in the best way. Every farm has its special requirements, and no experiments tried elsewhere can be of more than general use. If a man confines himself to the use of natural manure he need trouble himself very little about experiments; but upon a large farm chemical manure must play its part, and without the application of some test to the soil it is impossible to know what to use. The special mixtures of manure dealers may or may not answer; in any case they point to a probable loss which ought to be avoided. To avoid such loss Norfolk farmers have formed an association for the purchase and preparation of such manures under the management and guidance of an able chemist, which gives them an immense advantage, for they thus obtain genuine manure blended in correct proportions for their special requirements at a very low cost.

WORK ON THE HOME FARM.

The hindrance to harvest work by wet weather has been most serious. Heavy rain set in soon after the reapers were in full swing upon the Wheat, and then for three or four days the Wheat had to be left alone. We were able to get on between showers with winter Beans and seed Tares, but the outlook was certainly gloomy enough. On light land forward Barley must have suffered. Corn generally on such land was ready for carting, and we travelled for many miles through fields with the corn all in shocks under a heavy rain. Such inclement weather brings out good or bad work among the shocks, and we regret to say we saw many with all the sheaves thrown down and saturated with rain. Picasant indeed is it to see how thoroughly in earnest the workmen are in the harvest field; and while it is most desirable that they should push on the work as fast as possible, yet the little extra care required to set up the sheaves securely must be given, and need not prove a hindrance if only the right way of doing it is acquired. Set the sheaves firmly on end, and press the tops of every pair firmly together, make the rows north and south, and be quite sure to leave the ends open. This last hint is necessary. On the day of writing this note we saw a number of shocks with a sheaf in each end, so that it was impossible for the wind to blow through or the air to circulate among the sheaves as it ought to do.

With such unfavourable weather not an hour of sunshine must be lost when it does come. Wheat ripens quickly, even between clouds and sunshine, and if left out too long much of it will be shaken out. The most troublesome thing in a wet season is the rampant growth of weeds and layers of Clover or mixed seeds among corn, and the best plan is to leave rather a long stubble, as there is much risk of damage from overheating, especially among Barley and Oats. In the Fen district the work is very heavy, for the crops are abundant, and the corn is much heated down. We hear much of the pluck and energy of the British farmer, and he certainly has need of them when to low prices for his farm produce are joined the trials of unseasonable weather. Such difficulties doubtless develop character, and while they are met with a firm resolve to do all that can be done to overcome them a large measure of success will crown our efforts.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1899.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
August.			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	in.	
Sunday		11	29.55	59.5	51.8	N.W.	60.3	67.0	51.5	113.0	47.5	0.063
Monday		12	29.713	56.9	51.7	W.	59.9	62.7	50.2	97.7	46.9	0.010
Tuesday		13	30.010	60.1	55.0	W.	59.1	61.9	52.8	118.6	47.8	—
Wednesday ..		14	29.998	60.7	51.7	S.E.	59.0	67.4	53.0	102.9	51.1	0.103
Thursday		15	29.844	63.9	58.4	N.W.	59.2	72.9	56.7	118.1	52.4	—
Friday		16	30.031	61.5	60.0	S.W.	60.0	70.2	55.7	123.2	52.6	—
Saturday		17	29.793	61.0	61.1	S.	61.5	73.4	59.8	118.8	57.0	0.038
			29.841	60.9	56.8		59.9	69.2	54.2	111.8	50.8	0.314

REMARKS.

11th.—Fine early, dull at midday; showers and distant thunder in afternoon and evening.
 12th.—Cloudy with slight showers in morning; fine afternoon and evening, with one or two gleams of sun.
 13th.—A little sun early; cloudy day.
 14th.—Fair morning, wet afternoon and evening.
 15th.—Bright and fine.
 16th.—Warm and generally bright.
 17th.—Showery till 9 A.M., generally cloudy in morning; heavy shower at 1.15 P.M.; fine and bright afternoon and evening.
 A dull showery week with temperature near the average.—G. J. SYMONS.



MR. GLADSTONE ON FRUIT CULTURE.

A FEW years ago, when Mr. Gladstone advocated the cultivation of fruit for jam-making purposes, he appeared to be misunderstood by a considerable section of the community. He was, by those who thought the line a good one to take, represented as advising owners and occupiers of land to relinquish the cultivation of ordinary farm produce and "grow jam." Probably those who made the most of the subject from that point of view knew very well that nothing of the kind was meant, as nothing of the kind was said. Fruit culture for jam production was advocated as a home pursuit worthy of extension, as an adjunct to, not as a substitute for, the usual farm crops. That speech, though commented on in various ways, and to a large extent adversely, as are most of the utterances of distinguished men, nevertheless gave a great impetus to fruit culture and to the production of jam on a more extended scale and of better quality than before.

Mr. Gladstone has again spoken, and made his meaning clear, which he has often failed to do on the first attempt. He now says, after speaking of the advantages we as a nation possess in cheap sugar, that so long as it remains cheap, "it may be said for such fruits as will be grown in this country that there will be an appetite; that there will be means enough for making it into preserves in jams, and the world at large will have plenty of appetite and plenty of means of consumption of all the jam that is made." Then he goes on to say, "I do not think it is going to cause a revolution in the state of agriculture. Not at all. British agriculture must depend, not upon the smaller, but the larger culture, upon the production of the great staples on which mankind must live, because though jam is a very good thing, yet mankind would not live upon jam." Those, he declares, to be his views generally, and really believes the whole subject is interesting and important. So do we, and we believe, further, that if the best is made of our resources the value of our exports in the form indicated may soon equal, and in time exceed, the value of the imports of Apples that reach our markets from America and other fields of production.

We do not mean by a very long way that British growers of fruit cannot compete far more successfully than heretofore with transatlantic cultivators in the supply of Apples for our markets. They can do so, and there is scarcely a doubt will do so as time goes on. We look for steady improvement in our home supplies when the better chosen varieties that have been, and will continue to be, planted come into bearing, and when the growers generally learn, as not a few have done, the best manner of placing their fruit in the markets. The negligence that has been apparent in orchards during the past generation, and the loose slipshod manner of marketing the fruit, gave an opportunity to our competitors of which they took advantage both in culture, packing, and uniformity of samples. It is easy to abuse them for doing so, and the law for permitting them, but the real fault rests with the lack of effort at home to work on the same sound lines. The ancient trees have been trusted too long to supply the public want, and failed as soon as the produce of the young and more vigorous was placed in comparison.

Purchasers do not ask, nor care, where fruit is grown. They

want the best and best looking for the money they invest. It is all very well to appeal to the patriotism of consumers, but the patriotism of nearly all of them is in their pockets, as it is of those who make this claim against them. The best samples of British Apples never fail to meet with a ready sale, and these excel in quality the best that are imported, and are very few points, if any, behind in appearance; but Apple crops are prone to fail through weather vicissitudes. They have often been scant and unprofitable for four or five years together, then good seasons have followed. These alternations will occur again. Fruit foes, in the form of insects and caterpillars, may be combated, though the work may often be difficult; but it is not in the power of man to prevent a week of rainy weather or a few nights of sharp frosts during the blossoming period, either of which visitations are fatal to good crops of fruit. These occurrences, however, ought no more to prevent endeavour in growing the best Apples in abundance than ocean accidents should prevent ships being sent to sea because some are occasionally lost. The point we wish to enforce is this—if the best, and especially the most certain, return is to be derived from fruit culture reliance must not be placed on Apples alone, but soft or jam-making fruits should have a large share of attention. Our advice to all who can carry it out is to grow more of the best Apples, and grow more of the best small fruits too, for in these when well preserved we have a great and good customer in the "world at large."

Moreover, these fruits are the easiest to grow, the quickest in yielding profit on outlay, and the least likely to fail in affording satisfactory crops. Those who have taken note of the fruit crops over a long series of years know that this latter statement is correct. During the present year the crops, as a rule, of jam-making fruits have been far more profitable than Apples or Pears. There may be exceptions, and no doubt there are several, but after making the fullest allowance they do nothing more than prove the rule. Experienced cultivators of fruit for market combine the two kinds, and they are wise. This combination can also be carried out in small gardens, such as Mr. Gladstone had, perhaps, mainly in view when addressing his audience, though his remarks had at the same time a much wider significance.

The veteran statesman passed on to another subject—the transformation of barren Pear trees into productive Apple trees by grafting. His remarks were founded on a short communication he had discovered in the *Journal of Horticulture*. His discernment is noteworthy, for if we recollect there is nothing so precise on the subject in any of the previous issues of the paper over a period of forty-one years. Without doubt Mr. Kerl recorded his experience with accuracy in establishing a number of Apple scions on Pear stocks, and he sent us fruit from the trees. We shall be glad to learn more about his plantation. We have had specimens of Pears grown on Apple stocks, for some very good ones were sent to us by Mr. Samuel Stevens, F.L.S., from Upper Norwood two years ago; but until last year we had not seen Apples from a Pear stock, though we may hope to see more. We have established Apple scions on Pear stocks, and they grew very well for a few years, then either died or were blown out, showing that the union was not satisfactory. Mr. F. W. Burbidge in his valuable work on the propagation of plants records several instances of success in establishing Pears on Apple stocks, some of these of several years' duration, though so far as we know not one example of Apples bearing on Pear stocks is there recorded. It is practically certain since Mr. Kerl's experience is made so widely known that several barren Pear trees will be cut down and grafted with Apples, and in time some of them may, and we hope will, bear fruit. Something like a revolution will then be effected in the fruit world that would perhaps meet with more general acceptance than some of the reforms which the right honourable gentleman above mentioned has been instrumental in carrying out during his long and active career.

When Mr. Gladstone speaks again on the subject of fruit we should like to submit to him the desirability of advocating the cutting down of healthy Apple trees which either bear little or no fruit, or fruit of little or no value, and graft them with free-bearing sorts of proved merit, which we shall be glad to recommend. If the thousands of trees of the character indicated were treated as suggested, the Apple supply of the kingdom would be enormously improved in a very few years. Without wishing to deter persons from making experiments in converting Pears into Apples, we prefer to be responsible for the advice to make barren Apple trees fruitful, and turn those that bear useless fruit into producers of valuable crops. There is no doubt that this can be done, but there is a doubt that the interesting union of Apples and Pears can be generally and usefully effected.

As fruit growing and cottage gardening are subjects in which I have taken a deep interest for many years, I am glad to find that Mr. Gladstone has again drawn attention thereto. It is simply a waste of words to argue that we need more fruit. Fruit consumption is growing daily, and we are still daily exchanging vast sums of money for fruit imported from abroad. As to the desirability of our growing more fruit, I question very much if there is any difference of opinion. The real difficulty lies in our unlearning foolish customs. We follow too much old beaten tracks, and in fruit growing especially apparently forget that these tracks were formed when, of necessity, we had principally to depend on our own fruit for all the days of the year. In olden times we had a little of all things, and of all possible varieties, whereas the need of the present day is quantity of any one variety, and that to be of the best possible quality, and to be sent to market in the best possible form.

I have just been in Nottinghamshire, and though I passed by many orchards after leaving home I only saw one that, during the present season, would give any profitable return. Plum orchards might be excepted, the Victoria especially. This is the difficulty, but especially difficult here in the north. We plant hundreds of varieties of Apples, and over a period of time we have not twelve that will pay to grow. After the last sunless season all that have crops this year, we may take it for granted, are varieties adapted to whatever locality they may be found in. With me Cellini, though a rather small Apple, takes the palm; and all the Keswick tribe, Lord Suffield, and others are bearing profitably. I had previously heard of some wonderful bearing Apples that were largely grown by Mr. Merryweather of Southwell, Notts, and sure enough on this gentleman's extensive establishment I had a surprise, his Bramley Seedlings and his Russians (Duchess of Oldenburg) especially being something to both think about and wonder over. As I have already said, in olden times we grew a number of varieties for a year's supply, but now it is the fact that I can name a dozen fruit salesmen in Newcastle alone who will buy at a fair price all the Apples of good quality, of any one variety, that all the fruit growers of the north of England can supply. Yet we foolishly stand trembling about oversupply. I say again, as I have many times said before, let all favourably situated pasture fields be planted with not more than six varieties of Apples, and before twenty-five years are past these same fields for their Apples alone will yield from £20 to £50 an acre. In the meantime, as trees are growing, sheep will be feeding, and as surely the millions of money will be diminishing that we now send abroad. As to the planting, let it be well done, and then with a piece of copper wire run a few 4 or 5 feet memel plaster laths together, like Venetian blinds, and tie them round each stem to protect from rabbits and hares. At first this protection may go two or three times round to admit of expansion as the trees grow. Next put these trees under the charge of those who love fruit-growing, and so secure attention when attention is necessary. Of jam I might say the

surprise is the rapid strides the trade has made since Mr. Gladstone drew attention to it.—JAMES WITHERSPOON, *Red Rose Vineries, Chester-le-Street.*

THE CYCLAMEN.

THE gardening papers frequently devote a page or paragraph to Cyclamens, and wherever two or three gardeners are banded together as a society a paper or essay on the same subject is periodically contributed. Why is it, then, that Cyclamens are not grown better? Some nurserymen grow them exceedingly well, but in the majority of private places are they any better grown now than they were say fifteen or twenty years ago? Those who travel and visit can answer that question best. My experience (not a very wide one by the way) induces me to hazard the suggestion that during the history of the plant in question it may have been possible to grow it worse, but not much.

The neglected-looking specimens we so often see, with curly leaves and crippled blooms, are so many libels on the character of these beautiful plants. On the other hand, when we see well grown examples with ample dwarf foliage, handsomely marbled and brilliantly coloured symmetrical flowers, we willingly admit that no time is wasted in bringing them to such perfection, and that nothing can be more attractive and useful during the dullest months of the year.

Cyclamens when seen in good condition at a show command the admiration of all. Employers see and envy; gardeners admire, but despair. "Yes, they're grand, but we cannot do them at our place; so-and-so has special houses and men, and they must have special treatment to get them like that." Of course they want "special treatment," so do all plants. You would not treat Calceolarias and Chrysanthemums alike. What Cyclamens do not want is neglect. Herein lies the whole secret of success or otherwise. Red spider or green fly if tolerated will soon produce troublesome results, while too much water, too heavy or frequent supplies of food, entirely upset their constitutions. Yet they are not so very fastidious. Their wants are within the resources of most places; simplicity of retail and constant attention are surprising invigorators.

Some time in August the seed should be thinly sown in pans of sifted soil, two parts loam, one each leaf mould and sand; slightly cover the seeds and soak by holding the pan in water (but it must not flow over the sides of the pan), plunge to the rim in a cold frame, cover with a square of glass, over which spread a few handfuls of the plunging material. Some recommend bottom heat for the seed, but after repeated experiments I find a greater percentage germinate in the frame and make sturdier growth afterwards. When the seedlings are seen to be pushing through admit light gradually, but keep the glass over the pan till the leaves touch.

About the middle of September remove the plants to a cool house for a week or two. They are best, however, in an intermediate house from the beginning of October to the end of March. As soon in the new year as convenient prepare one or more boxes (mine are 30 inches long, 18 wide, and 3 deep), in the usual way, employing the same soil as before, but a trifle rougher, and prick off the seedlings 3 inches apart. These boxes will be found far preferable to small pots. Uniformity of moisture, both for the roots and the foliage, is maintained better; and this is very important while the plants are small. Under these conditions insects will not be troublesome. If, however, a few are perceived a very small quantity of tobacco powder will convey the necessary hint. If kept close to the glass and sparingly watered the middle of March should find the plants with good balls of roots and ready for another shift. From the boxes to 4½-inch pots is a good move, potting moderately firm; this time using three parts loam, one leaf soil, one manure, and a liberal dash of sand well chopped and thoroughly mixed, but not sifted. Put one large crock in the pot and a good supply of the roughest of the mixture. When potted return them to the same house for another fortnight, then remove them to a cool house; syringe night and morning, shade from bright sunshine, and water carefully.

Now is the time to look out for insects; examine the hearts frequently, as that is where the damage is done, and when green fly is observed you have the signal for a general dipping. Fumigating does more harm than good; it injures the leaves if too strong, while a light smoke will not penetrate and kill. Softsoap, at the rate of a quarter of a pound to three gallons of water, is safe and effectual. There is little difference between a cool damp house and a cold frame during the summer. Both answer for Cyclamens equally well, except that a house is usually provided with a blind, which of course is better than a permanent shade. If a frame is decided upon the plants may be placed there about the middle of May; in a month from that time they should be ready for their final potting. Mix the soil as before, using 7-inch pots, and plenty

of crocks for drainage. The advantage of putting one crock only in the smaller pots will now be seen; the roots enjoy the coarse soil, and undisturbed the ball can be repotted entire. Ventilate freely night and day, pinch off blooms that occasionally appear, annihilate pests, and wait patiently for winter; then, if the grower is not rewarded for his trouble and care with compact globular heads of healthy foliage from 12 to 15 inches through, and a profusion of bloom for at least five months, particularly in February and March, it will not be the fault of the plants.

Cyclamens flower even more freely the second year with suitable treatment. When the first season's flowering is finished remove to the cool house again, but drying off must not be practised. As fresh young leaves are observed repot into 8 or 10-inch pots. The 7-inch pots ought to be full of active roots, and to dry off or shake out under such circumstances is murderous treatment. If they are not well supplied with roots consign them to the rubbish heap; let the foliage die off naturally, and repeat as previously advised. Three-year-old plants are disappointing. At no time should too much manure be used with the potting mixtures, cow manure not at all. Feeding will not be required until the autumn, and must not be overdone then. Always keep the plants near to the glass. Direct sunshine distresses them, making the leaves flimsy; this is not good, and should be avoided. I have seen several sowings advised, but one will be found sufficient for most places, as the plants do not all flower at the same time.—S. Y.

TREATMENT OF SOILS AND MANURES.

(Continued from page 153.)

EACH of the three parts of soil have their constituents in different forms. The active is ready for plant life; the dormant is principally composed of "bases," ready to unite with active acids; the inactive part is a mass of elements in a latent state. The larger part of soil being inorganic proves that the mineral elements are far in excess of that required by plants. It is possible to exhaust the soil of mineral constituents by heavy cropping without returning any of those elements to the soil. They can be reduced by bad cultivation, but not in that case exhausted, as the action of the rain and atmosphere, &c., would convert the dormant matter into active plant food. A farm has come under my notice where the land has not received a coating of manure of any sort for at least forty years, yet twenty to twenty-four sacks of corn per acre is the return each time of reaping—quite an "Eldorado" the farmers will say; but the owner knows the value of the land, and farms it himself.

The grand secret to reap all the benefit of the soil is good working of the land, and any extra wages judiciously spent in tilling are saved ten times over, as the application of artificial manures will not be required. Take a small quantity of soil, place it in a glass, fill with water, and allow it to stand a while, then strain through an unsized piece of paper into a basin, and place in a position that the water can evaporate without any dust getting into it. You will have left a residue of active plant food. Again, add a little water to the soil left in the glass, and digest it in a hot oven, or even add a little cesspool water to it, filter again through the paper, and treat as before. This test will give a proof of the quantity of dormant matter capable of being made active by cultivation, or by natural causes in time. Apply diluted sulphuric or other acid, and treat as before. This will show the result of longer cultivation, and with stronger acid some of the inactive portion of the soil will be compelled to yield some of its elements for plant food, as it would by long cultivation. The action of the air when the soil is turned up to its influence has the same effect as the weak or stronger acids have upon the soil tested, and acids put into the soil in manures have a similar effect upon the subsoil. I recommend that a portion of the subsoil, if only a few spadefuls in each trench, be thrown over the surface, to be exposed to the action of the frost, for by this means some of the essential elements will be brought within the reach of the plants.

I stated that cesspool water should be thrown over manure heaps in covered yards, but on most establishments more would be created than could be used in that way. When emptying cesspools the contents should be preserved in a heap of potting refuse and protected from the air and rain, and if turned over once or twice till it is dust dry it can be used as a top-dressing in rainy weather, and be more useful than any artificial manure. I remember 30 tons of spring Onions being grown on an acre of land with only the assistance of natural manures and not on rich alluvial soil, which they like.

Blood is often at the disposal of the gardener together with dead animals. The practice in this district amongst some—as blood can be procured here in any quantities for nothing—is to dig a trench at the foot of their Vine or Peach borders, and pour in the mixture

in a crude state. The effect is that all the soil surrounding the blood, &c., is putrified, and no roots will enter it. A Vine border came under my notice which had been the cemetery for all the dead animals on the estate for years. In remaking the border I noticed a Vine root had been near the surface soil for a considerable time, but had gone down to seek food in the sweet sterile subsoil rather than enter the putrid mass. Blood is composed of phosphoric and sulphuric acids, together with phosphate of lime, sulphate of magnesia, oxygen, chlorine, and sodium; or 100 parts of blood contain 80 per cent. of water and 20 per cent. of solid matter. If reduced or decomposed by fire the ash, which is 1 to 2 per cent., consists of half sea salt, the other half peroxide of iron, lime, carbonic acid, sulphuric acid, together with magnesia, potash, and soda. All these useful elements being in blood, can anyone doubt that it is a good fertiliser? It is undoubtedly good, but often badly used. To reap the full benefit of its four-fifths of water, as well as the one-fifth of solid matter, level a portion of the waste heap, and throw over it the blood, cover it with soil, and repeat the process till a sufficient quantity is made. Keep it well covered from the rain, and when the blood is decomposed to a dry state have the heap repeatedly turned till it is properly pulverised; then you will have a heap of manure superior to any bought material. I made a heap last year of about 200 loads, mixing with it lime; but that requires great care, or all the ammonia may be lost. Lime is best put on the soil by itself to mix with the blood oxides there, by which means each application will improve the effect of the other as a source of plant food.

Lime (calcic oxide) is often misapplied. Heavy dressings are given to light lands that are often very fertile, and rendered, therefore, sterile. The effect is very rapid in taking into combination sulphuric, phosphoric, chloric, and carbonic acids, carrying them down into the subsoil, if they are not used at once by the plants, rendering the soil devoid of active matter to a certain extent before the ground can be again worked. The chemical effect of lime is more rapid on light and peaty soils, particularly if applied in a hot state. The best means to supply lime to boggy or very light soils is by an application of marly clay, which is rich in carbonate of lime and also alumina, supposing that to be essential. Clay improves the texture of the soil in retaining moisture, and consequently assists in supporting plants for a longer time. Tenacious clays should be exposed to the action of the frost and pulverised before being dug in. Garden soils are not often boggy, though sometimes very light, in which case it is preferable to burn the clay and apply the residue. Light dressings of lime to soils full of humus are very beneficial, and as lime is often easier to get than clay, I ask that it be used carefully, so as to give the expected benefit instead of causing failure. The application of lime to heavy soils is of more service; it acts chemically upon the clay parts, and assists in separating them so as to allow a freer current of air, which in its turn also assists in drying and severing the stiff parts. The first important thing, however, is to drain strong wet land before uselessly wasting money and energy in the forlorn hope of improvement. I may treat on this subject in some future paper, and will assume for the present that the subsoil is porous and only the surface needs improving. More often than not a layer of clayey loam, through which water can scarcely percolate, exists between the surface and the gravel subsoil. This impervious layer must be removed, or if only at a short distance from the top it may be worked with some burnt clay, gravel, sand, or light soil from other parts of the garden. If sand is close by place a foot or two at the bottom of the manure heap or yard, and apply this to the heavy part once or twice, or charcoal or cinder ashes can be used in the same way till the soil is in a condition to suit the gardener and the crops.

Soot is so common that it is scarcely necessary for me to dwell on it at any length. Its component parts are carbon, ammonia, gypsum, nitric acid, &c. Carbon absorbs much oxygen with other gases, particularly the obnoxious; in fact it sweetens the soil and also improves its texture, especially if heavy, and gives off carbonic acid for the sustenance of the plants. The ammonia and nitric acid give nitrogen, and gypsum calcium, &c. Soot is one of the most useful of fertilisers, and can be used without much danger either as a top-dressing or mixed with the soil, or in the form of liquid manure.

There are many other manures within the reach of the gardener upon which I feel competent to treat, and will continue the subject in a future issue. Two printer's errors occur in my previous communication. On page 152 the sentence should have read, "This dug (not dry) ground is helping the gardener," and on page 153 dry or trenched should have read "dug" or trenched.—G. A. BISHOP.

It would have been more prudent if Mr. Bishop, who admits that "he does not feel equal to the work of giving instructions to

the scientific," had limited his advice to the proper storage of stable manure and the best means of utilising it in the growth of plants, in which doubtless he is thoroughly experienced; but notwithstanding his repudiation of scientific knowledge he devotes the principal part of his article to a description of chemical actions and reactions which is certainly not in accordance with the recognised authorities on the subject. The confusion in his statements is so extraordinary that it is difficult to disentangle and deal with them directly without entering into details too long for a letter; but one or two of them may be selected in justification of my criticism.

He states that "the nitric acid formed from artificial manure unites with the bases in the soil and forms nitrate of soda, magnesia, and potash, &c." As the nitric acid in artificial manures is almost always in a neutral state, combined with soda and potash, it is difficult to understand how it can recombine with those bases in the soil. Then, again, he states that "carbonic acid is abundant in all manures from stables and cowsheds, and is also deposited on the surface of the soil as carbonic di-oxide, which is taken in direct by the plant." Carbon di-oxide is merely the chemist's name for carbonic acid, and is not deposited on the surface of the soil, and even if that were possible it would be useless to the plant, as the enormous quantity of carbon, about half of the whole substance of the dried plant, is derived from the carbon di-oxide of the atmosphere (Sachs), and not from manure, stable or artificial. Mr. Bishop instructs us that "there are four principal elements of plant life—potassium, calcium, magnesium, and iron." Considering that phosphorus is present in every plant, and without it growth is impossible, and, further, that annually hundreds of thousands of pounds are expended on it as a manure and comparatively little on calcium, magnesium, and iron, phosphorus might be considered a principal element. Mr. Bishop divides soil into "three different forms of constituents—the active, the dormant, and the inactive." The active ready for the service of the plant; the dormant has to be roused by some of the constituents of the manure applied or by the oxygen of the air; and the inactive is only made active by long cultivation or the application of strong manures. What are the strong manures? Surely Mr. Bishop, who despises artificial manures cannot refer to them; but his division of the constituents of soil is not scientific. He omits the largest division, about 95 per cent. of the whole, consisting of sand, clay, gravel, &c., which give only mechanical support to the plant and afford absolutely nothing to its nutrition. His last two divisions should be only one, consisting of humus, organic detritus, and undecomposed minerals, which by the united action of cold, heat, carbonic acid, and oxygen are first disintegrated and then decomposed, when having become soluble they are capable of absorption by the plant.

He says, "the only practical advantage artificial manure has over natural is that nitrogen is retained in the former." Is it of no advantage to know the exact composition of the manure, and to be able to economically apportion its ingredients to the actual requirements of the several crops, and secure that each plant shall have a sufficient supply of its dominant constituents? For instance, an extra proportion of potash for the Vine and Potato, and of soda and lime for the Apple, &c. Is it no advantage to be able to effect with a handful of properly compounded artificial manure all or more than could be done with a barrowful of stable manure, the value of which, according to Mr. Bishop, is very uncertain? Then, again, stable manure is not always procurable, while artificial can be had at any time, and its carriage is much less costly, as 1 cwt. of the latter is at least equal to 2 tons of the former.

It is only possible to approximate a sound conclusion by giving full consideration to both sides of a question; the relative value of stable and artificial manure is well worthy of this consideration, but before Mr. Bishop again attempts to depreciate the value of artificial manures I recommend him to consult the authorities on the subject, some of whom have devoted their lifetime to its study; and before he again essays to teach the chemistry of manures to endeavour to acquire some knowledge of the rudiments of the science, otherwise to follow the good advice in the old adage, *Ne sutor ultra crepidam*.—EDMUND TONKS.

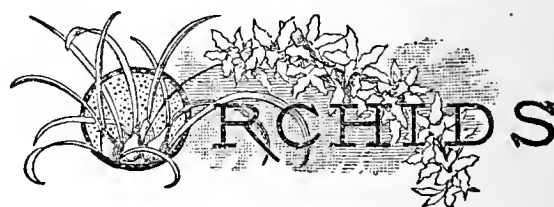
NOTES ON PEAS.

DURING the present season Peas have given more than ordinary trouble with many growers, from the earliest to the latest sowings. There are, of course, exceptions to this rule, as is always the case, no matter what the weather may be, for whereas some have a numerous army of garden pests to deal with others are favoured only with a few. It is singular how in one season birds will prove so very persistent in their depredations, and perhaps the following year they cause no inconvenience whatever, this being more

particularly noticed with sparrows and chaffinches. Early Peas this year proved a source of great disappointment, slugs and birds proving alike troublesome. In our case sowing and planting had to be repeated three or four times, and then the rows presented a very thin and unsatisfactory appearance, caused by the young tips being eaten off directly they showed above ground by slugs and birds, the former being more numerous than ever I can remember them before. Both these and mice have a singular partiality for some varieties of Peas, opportunities occurring for ample demonstration this year in this respect; Dr. Maclean and Duchess of Edinburgh proved victims, while *Ne Plus Ultra*, *Magnum Bonum*, and Duke of Albany escaped almost untouched. Peas, too, germinated badly, owing no doubt to the sunless season of last year proving insufficient for thoroughly ripening the seed.

Lately there has developed among the Pea rows some kind of disease, which is even worse than bird or insect attacks, as in some of the late sown nearly or quite half of the stalks have collapsed, and as a consequence the crops are becoming light. I have noticed the same thing in other gardens as well as our own, and perhaps some readers may be in a position to throw light on the subject.

Second early Peas have continued to bear over a long period, this being accounted for by the continued spell of dry summer weather followed by the frequent and abundant rains. The drought caused the growth and pod-production to cease prematurely, while the change to greater humidity gave a stimulus to new growth again—a fortunate event where later sowings are stricken with the aforementioned disease. Those who are favoured with a sufficiency of labour may be strangers to the scarcity of Peas or with disease, as when provided with abundant supplies of liquid, or even clear water, the growth is not so subject to climatic influences as they otherwise would be. All are not alike favoured with help, and to these early mulchings are of the greatest importance in conserving moisture in the soil.—W. S., *Frome*.



PHAIUS MACULATUS.

THE genus *Phaius* is not a large one, but it includes several noble species, some of which bear ample dark green leaves and erect spikes of very bold and handsome flowers. These plants, in recent times, have been too much neglected; but many years ago *Phaius Wallichii* was frequently seen at the Exhibitions at Chiswick, Regent's Park, and other places during the months of May and June. It produced a noble appearance, especially when used as a back-row plant, with its large, plaited, dark green leaves, and from ten to fifteen bold erect spikes of fine showy blooms. This species used to be so exhibited in fine condition by the late Mr. Ellis of Hoddesden, a keen lover and grower of Orchids, and also by Mr. Carson, from the famed gardens of Nonsuch Park, in Surrey, and by various others. *P. grandifolius* was another species exhibited in the same manner in the olden times, which, although not quite so showy as *P. Wallichii*, was yet a very effective plant; whilst yet more recently has been added *P. Manni*, which, when established in cultivation, will be far the finest of the three. The majority of these plants are of easy culture, and may be successfully grown in an ordinary stove with a mixed collection of plants, and if their wants are duly supplied they never fail to produce their stout spikes laden with large and showy flowers in abundance. There are some dwarf-growing kinds; one of the most beautiful, although difficult plant to manage, is *P. tuberosus*, a native of the Island of Madagascar, which was figured in the second volume of the "Album," t. 91. *P. maculatus* has been neglected, but it may yet be found in many old collections of stove plants, where it grows and blooms in great perfection. The plant here figured was introduced to cultivation about sixty-six years ago, having been brought from Northern India in 1823, and as the great aim and object of modern Orchid growers has been to secure new species, this old plant, like many others of the most beautiful Orchids, has been cast on one side for newer and, in many instances, less beautiful kinds. To all such movements, however, there usually comes resuscitation, and this appears now to be in force, for the old plants are being eagerly sought for, and amongst them *P. maculatus*.

Phaius maculatus is an evergreen, and is an extremely showy plant; in many instances it is erroneously named *Calanthe Sieboldii*, from which rare plant it is abundantly distinct. The pseudo-bulbs

are ovate, about 4 inches high, and of a peculiar shade of green; the leaves are about 2 feet in length, much plaited, the ground colour being green profusely ornamented with yellow spots. The scape is erect, from 18 inches to 2 feet in height, and towards the apex is borne a raceme of about a dozen flowers, which are of a showy yellow colour; the lip is fringed and streaked with reddish brown on the front margin. The flowers open during the spring months, and continue in beauty for a very long time.

The plant is easily grown into a good specimen, and it requires only the ordinary care bestowed upon stove plants. It enjoys an abundance of light and sunshine, yet, as its leaves are somewhat thin, it should be shaded through the hottest part of the day in summer, in order to preserve its foliage intact, for they present a very bad appearance when scorched. If the plant is grown with other Orchids it will thrive best at the cool end of the East India house or the warmest end of the Cattleya house. It is a terrestrial plant, and should be potted accordingly; the soil we have found it to thrive best in is rough fibrous peat, good turfy light loam, and sharp sand thoroughly incorporated. The drainage must be good, and should be covered with a layer of sphagnum moss to prevent the mould running into and choking it. A liberal supply of water is necessary during the growing season, which must, however, be considerably curtailed during winter, when, although much less is necessary, it should never become quite dry, or the leaves will suffer and the plant become disfigured. At the time the spikes begin to appear the supply of water may be increased, as these require strength to develop their beauty. When the blooming season is over the plant begins to renew its strength, and this is the best time to repot; if this is not necessary the upper portion of the old soil should be removed and renewed.—B. S. WILLIAMS (*in Orchid Album*).

ODONTOGLOSSUM ROSSI MAJUS.

PLANTS that have been suspended at the warmest end of the Odontoglossum house since they flowered in October last have completed their growth. At this season they are liable to start again unless they are removed to the coolest end of the house, or better still to a very cool airy position. This will retard them. They must still be liberally supplied with water and shaded from bright sunshine. We have found that no injury results from suspending them under the shade of Vines, where the ventilators are open day and night. On established plants an autumn growth is not desirable, and may with a little care be prevented. It is clear that this variety will bear without injury a very low temperature. When a succession of flowers is required over a lengthened period of time some must be pushed into growth in a warmer atmosphere than is necessary for the general stock. The only drawback to this is the liability of the plants to make a second growth. Few Orchids with which I am acquainted yield a better return for the room they occupy and the labour required in cultivation. The flowers last well in a cut state, and are suitable for any purpose, especially for furnishing small vases. All our plants are grown in small shallow pans, 5 and 6 inches in diameter, and very little more than 2 inches deep. A good layer of crocks is placed at the base, and the plants potted in peat fibre and small lumps of charcoal, with a thin layer of moss on the surface. The plants are but slightly elevated, as they require very little rooting material, but what is given them should be open and sweet. From six to twelve good flowering pseudobulbs are grown in each pan.—ORCHID GROWER.

EDIBLE FUNGI.

THERE are few matters that the general public are more deplorably ignorant about than that of fungi. While every rustic knows the Mushroom, and considers an hour's search well spent if he is rewarded with finding half a dozen, he may at the same time have passed over fifty funguses which, if he only knew to be non-poisonous, would be gladly gathered. But it is not only the rustic whose information is faulty. Among gardeners, who ought to be better informed on the subject, there is probably not one in a hundred who could gather a dish of edible fungi and have them cooked for his own dinner without grave misgivings as to results. This ought not to be. Which of us does not like a well-cooked juicy Mushroom? Which of us, this side the Tweed at all events, for it is a well-known and rather extraordinary fact that they do not take kindly to them on the north of that famous river. I have frequently been told when advocating their merits that they would be "geyan hard up afore they would eat a wheen wersh puddock stules," a remark suggestive of poor cookery. The whole fungus family require not only to be well seasoned, but to be thoroughly well cooked.

But for those who do enjoy the above-named luxury isn't it

just a little hard that we are denied entering on a more extensive field of fungology, all for want of a little information?

I have often wondered why some enterprising nurseryman did not issue a coloured plate of five or six of the best and commonest edible fungi; and a like number, and those the most closely resembling the good, of poisonous or useless varieties, as a safeguard, with names and brief description. Such a plate would be likely to hang for years in many a gardener's office or kitchen, and in many a country home—not only for annual reference, but as a perpetual advertisement of the firm who sent it out.—A. C. W.

PHYSOSIPHON LODDIGESI.

AT one of the meetings held by the Floral Committee of the Royal Horticultural Society at Chiswick this year, Mr. F. G. Tautz of Studley



FIG. 24.—PHYSOSIPHON LODDIGESI.

House, Hammersmith, showed a plant of the peculiar little Orchid represented in the woodcut (fig. 24)—namely, *Physosiphon Loddigesii*. It is not altogether devoid of attraction, as it is graceful in habit, and its slender spikes of flowers are freely produced. The generic name is

due to the swollen or bladder-like greenish flower tubes, which are surmounted by small orange-brown sepals. It thrives very well in sphagnum and peat in an intermediate temperature.

APPLICATIONS OF CLAY TO GRAVEL.

Soon after I came here I was made aware of a Government surveyor taking the dimensions or outlines of a small pond at the corner of my garden; some mistake had occurred in the previous survey, and he was there correcting it upon a section of a map. I informed him that I was a new proprietor since the local survey, and was it too late to alter the name of the place from "Folly Farm" to "Cottage Farm?" He thought not, so Cottage Farm was written, and Cottage Farm it is in the new survey. A friend and historian of the neighbourhood called upon me lately and said, "Mr. Fenn, you have altered a landmark of history by blotting out the name of 'Folly' and reinstating that of Cottage." How so? I was aware of the penalty expressed by the removal of one's "neighbour's landmark," but how the substitution of the appropriate word Cottage in lieu of Folly to my place could efface history passed my comprehension. Quoth my friend, "Folly in Roman history means a crossing place or way, and it was somewhere about here that the old Roman-way used to cross the river Rennet" (the old Silchester Roman station is about three miles from here). Well, I replied, in that case I must beg history's pardon, but why I altered the name was because I thought at the time I really had committed a folly in purchasing the hungry gravelly looking place. They twist surnames about here, and as "Folly" might merely mean a corruption of Foley, the name of old residents in the parish, I changed the name in fact to cover my chagrin. Time, however, has convinced me that I did not commit a folly, as I have succeeded in making another portion of this fair earth to blossom as the Rose. Since the above accusation of my friend I have read in "Old and New London" where mention is made of Folly Ditch, or a ford leading to Jacob's Island. Historians please inform. But the above must be allowed in a measure explanatory as leading to the application of clay, which a correspondent asks me to favour him with on page 110.

Now is the time. The grand secret of the Woodstock soil was the subsoil of clay. The top soil was worn out, giving it the appearance of mere cca-se gravel. Bastard trenching was at once resorted to, and about 3 inches of the clay hoisted on to the surface as the digging proceeded for the sun and air to act upon it at once, and afterwards the frosts of winter, then to be dug or forked in as a top spit in the spring with dung or any other manurial accumulations. The effect will be magical; at least, it was with me. When I left Woodstock "Fenn's fads" were quickly done away with; the garden was laid down to grass as a croquet ground, and Mr. W. Crump, who then resided at Blenheim Gardens, had the superintendence of the mowing of the Rectory ground. He told me, as a grievance, that he was obliged to send men to do so twice a day. Well, Mr. Crump is alive and well amongst us, I am happy to say, and if the above words to me are doubted I cannot help it.

My garden here is a more decided gravel than that at Woodstock. I had it drained and trenched, keeping the bottom down, but turned over, as the clay *in situ* is too hungry and stoney to be brought to the surface. I have capital sub-banks of pure clay in my fields; portions of this were and are periodically dug and carted and lain upon the surface for the winter frosts to split up. Manures cannot beat it for effect. Strawberries, fruit quarters, orchard trees surfaced, all become dosed, though, excepting the arable land, never dug, and the clay soon becomes amalgamated into loam. Your correspondent's subsoil is a gravel. I advise it not to be disturbed; let him haul clay at once on to the surface and cultivate as I have said in the spring. My ground is undulating; on a declining side of one of my fields strata of clay and gravel alternate; the consequence was a wet sour surface which medium drains did not correct. Drains approaching to deep ditches were dug and piped at bottom, which corrected matters, and left me clay for surfacings and to spare for burning. I place the gravel over the pipes, and a main drain empties into the river.

I borrow soil from other parts to pay the filling up. I also stifle burn a portion of clay every autumn after this fashion:—Collections of hedge trimmings, roots of trees, and other debris, which are sure to be collected by those on the look-out, and the clay hauled to the spot. On a farm it is usually not found very difficult to cut a load or two of turf sods. These are placed around to form, so to speak, a turf-walled furnace; a wood fire is started therein, and whilst this is being attended to to produce a good body of fire build up another wall of sods about 2 feet distant all round, and well packed within with prunings, and some of the larger wood, with a sprinkling of small coal or cinders. Do not hurry on the central fire by heaping on too much; make sure of a good central

body of fire, and by degrees place sods upon it, and now and again a few more, intermixing a portion of the clay. The inner circle of sods will by this time have become ignited, and will serve to retain the fire, and so communicate through to the second circle, which will follow on and maintain itself. Now pack around from base to top the larger roots, intermixed with the clay, along with a portion of small coal. Attention will be required perhaps all night, or at least till a good body of fire may be considered as secured, and then keep gradually heaping over the clay where the smoke attempts to burst forth; but never overheap too much at once, as it is then that failures are made. Perhaps it may be advisable to continually intermix some small coal where clay burning follows on upon a large scale.

Apropos of this subject, a few years ago Mr. Buckmaster came to stay with our late rector for the purpose of delivering an agricultural lecture in our school-room. Mr. Gladstone's famous advice to farmers about planting fruit trees and making jam was then fresh on the tapis, and Mr. Buckmaster laid stress upon it in his lecture. My place adjoins the glebe, and as I had known Mr. Buckmaster for some years a visit to me next morning was planned, where he found my wife's shelves well furnished with jams, the cellar stocked with cider and perry, and the fruit trees that produced them "all alive and a growing." "Why," said he, "you already have Mr. Gladstone's theory practically illustrated." "Yes," I answered, "it was in 1851 I caused to be printed in the pages of the *Cottage Gardener* much the same advice, and long before that, and ever since, I have in a great measure subsisted upon what I then recommended." (I have sixty gallons of wine now working in the barrels, and our shelves are well furnished with jams, but I shall not be able to make any cider or perry this year). "Well," Mr. Buckmaster said, "my train is due at 12.30; I should like to spend a longer time with you, but just let me advise potash for your soil." We were close to my heap of smother burning, so with a "pikle" which was standing handy I broke into the side of the heap, and out came a charred mass of charcoal wood and burnt earth. "There," I exclaimed, "that is what I apply every year, and as much as I can get of it, to my soil, and thus I do use potash." Mr. Buckmaster went. Now, if our good friend and correspondent will take my advice, and our Editor will forgive my prolixity, he may reckon upon his land with confidence, and if he feels i' the vein he may repeat the following incantation:—

"Black spirits and white,
Brown spirits and grey;
Mingle, mingle, mingle—
Ye that mingle may."

—ROBT. FENN.

STRIKING DRACÆNAS IN BOTTLES OF WATER.

THIS simple method of propagating Dracænas does not appear to be practised as much as it should be, considering it offers greater advantages and gives less trouble than any other known method of rooting large tops of these showy and useful plants. Those who have not the convenience of a propagating house have often great difficulty in finding handlights, bellglasses, or frames with bottom heat large enough to place over good sized tops of Dracænas to keep them close till rooted when inserted in pots in the usual way. But if bottles filled with water are used it is not necessary to keep the cuttings in a perfectly close atmosphere, the large amount of water which the cuttings absorb when placed in water prevents their showing the least signs of distress if in a warm moderately close house where direct sunshine does not reach them. When placed on the beds in Cucumber and Melon houses where the plants are trained overhead they root with certainty, and give but little trouble. Whenever we have plants that have become too tall, we cut off the tops to the required length, leaving a couple of inches of stem below the leaves, place them in bottles which have been previously filled with water and a few pieces of charcoal added, the bottles are then stood in positions above indicated as being suitable. The only attention they require till rooted is to keep the bottles filled with water, the tops being syringed when the other occupants of the house require that attention. When the roots are a couple of inches long the tops should be placed into small pots, and in the same positions that they occupied before being potted, till the roots are found to be working freely into the soil, when they may receive the same treatment as the ordinary stock.—H. DUNKIN.

CANKER IN FRUIT TREES.

IF "W." (page 108) thinks I am only writing for the sake of "making a point," he is certainly mistaken, and whether he believes me or not, I am tired of this subject. At the same time, for the sake of fruit growers in general who do not entertain my views, I think it only my duty to put such information before them that I can with a view to getting rid of the old notions that have been drilled into us from childhood, and which I claim were upset upon the principle that insect life is at the bottom, or primary cause, of canker in fruit trees. I have no "razors" to sell, no pages to fill, or books to sell, therefore I have no interest in continuing writing for the sake of writing; but, on the other

hand, having taken up the subject as a hobby, it has cost me a considerable amount to be in a position to feel confident that I have mastered the principle by observation and experiments.

Our friend "W." is an old hand at writing, and I acknowledge his superiority. To follow his note in p. 108 probably would necessitate a lengthy reply and the use of a good many quotation commas, which I am in no mood for; at the same time I am as far as ever—even further—off throwing up the sponge or fighting my "insect theory." "W." seems very anxious to draw out a reply as to wounds healing while "insects are as busy as ever in their destructive work." I have no recollection of making such an assertion, but this I know, that wounds do sometimes heal up and cause lumps on the branches, even as big as one's fist. As to Mr. Tonks's garden and trees, and his "millions of insects," I know nothing of them, and as I like to "prove all things," I am not prepared to hazard another guess as in the case which "W." draws such consolation from, "the sorts they like best." If I prove by experiments that we have nothing to fear as to planting certain sorts of Apples that are said to be "subject to canker" if kept free from insect life, surely there is nothing for me to be "dissatisfied" with, but exactly the opposite.

Well, now as to Impney. I have made it my business to follow "W.'s" advice, and by the kind permission and assistance of Mr. Parker, have examined the tree from which the specimen was cut that was engraved a short time ago. It cost me about 6s. out of pocket, a good drenching, a cold, and the loss of half a day in my garden, and, will readers actually believe it? I found the identical insects in the tree, within a few inches of where "W." cut his specimen, which I have never yet failed to find on specimens at the commencement of a canker spot. My visit was a most unfortunate one, as at the time everything was drenched with rain, and a bad light. Mr. Parker next showed me an Apple tree, the trunk of which was about half eaten with an old canker wound, or wounds, for there were two; these had been dressed, he informed me, with petroleum—mark that, a kill-or-cure insecticide—and these were healing most satisfactorily, a plaster of cowdung and clay hastening the cure by keeping the place moist, and the bark fast swelling towards the closing wound. What about Jack Frost and the unripe wood theory? thought I, on that old wood.

I was next shown a Ribston Pippin pyramid. I thought Mr. Parker seemed a little reluctant to even refer to its pitiable state, and he soon informed me it was condemned to be rooted up. I took off, by permission, a piece of the dying wood, and found that the bark was entirely killed round it in places, and on close examination I soon detected at least half a dozen species of insects and grubs hard on—of course not "causing" canker, but simply there in "consequence" of canker—according to "W." and Mr. Tonks, and among the list the inevitable little rascal so often referred to. Now, that tree offers an excellent opportunity for Mr. Parker to experiment upon, instead of rooting up, I have no more doubt about curing that tree on the insect theory than I have that the sun will rise to-morrow morning. So much for canker at Impney, except lastly, that I was greatly obliged to Mr. Parker for his kindness and the frank manner in which he gave me information, although he had the courage—which I am sure I esteemed, and no joking—to tell me that he did not agree with me. The crops of fruit were excellent, far surpassing anything seen this season.

Since writing the first portion of my note I have read with much pleasure Mr. Tonks's letter on page 128. I was passing through Birmingham to Liverpool, and seeing the Journal on the bookstall invested in 3d. worth, and soon found the article, and conned it over, resolving at the same time that if opportunity presented itself a run over to Knowle would be the result. On my way back, having in the meantime tramped the Isle of Man until I was blistered and footsore, I resolved to "prove all things," and accordingly made my way to Knowle, and Oh! "W.," if you could have seen me trying to endure, being tired of walking, steam-boating, railway travelling, for I had started from the Isle of Man that morning as well as writing. Although if you do not believe me, you would have pitied me certainly; and, like the journey to Impney, the very elements seemed as contrary as my friend in controversy. It commenced pouring with rain, but, nothing daunted, Mr. Tonks seemed as indifferent to wet as a duck in a pond, and I had to follow him in the garden. The first thing to which my attention was called was as we passed through the conservatory, in the matter of plants having a shrivelled-up appearance, as if scorched. Asked if I could account for it I examined the foliage, and on the under side of the leaves I discovered innumerable insects of a new description to me, so far as a very short inspection permitted. These were treated by our friend Mr. Tonks with a "pooh pooh." All up, thought I, if that's the way canker is to be passed over among the fruit trees; and so I found it on close examination, for there sure enough were the identical little vermin. Oh! I must not "s'ander" them—the little innocents, which "W." led me to suppose had all disappeared. Well, joking aside, I cut off portions of the freshest cankered wood, and inspected them in the "Grange," and placed the insects, which I have so frequently referred to, under Mr. Tonks's microscope. My impression is that Mr. Tonks will not let it enter into his head that they are the cause, but the effect of canker, and I felt somewhat of shame to have the appearance of dictator. Now, the question must naturally arise, Where do these insects come from to invariably occupy cankered places if they are not the cause? Are we to believe in spontaneous generation of this particular insect? Or may we believe that they are as destructive in their particular sphere as aphides, red spider (and I believe they are a species of this family), thrips, American blight, or other well-

recognised enemies in horticulture? 1s. 9d. railway fare, a soaking, and the afternoon lost, to clear up the Knowle mystery.

"W." informs us, I believe, that he has a Hawthornden Apple tree that is badly cankered. Now, will he be kind enough to send me a fair specimen of the most recent attack for examination? As "W." prefers to keep his name a "dark un" I cannot ask him personally, and our friend Mr. Parker is equally guarded as to our mutual friend's name. He says he is "open to conviction," but I am afraid there is not sufficient ink in the bottle to do it in writing.

We have been introduced in writing to Dr. Hogg's trees—the Dumcallow's Seedlings. Would it be asking too much to request that a specimen or two be forwarded from these trees? I have no doubt about finding the identical insects in every case, or on every tree of fresh cankered wood in the kingdom.—J. HIAM, *Astwood Bank, Worcestershire.*



NOTES ON SOME NEW ROSES.

THE following are a few notes on some of the newer Roses as seen this season:—

HYBRID PERPETUALS.

Earl Dufferin.—This has disappointed me considerably. I saw no blooms last season, and all those on my own plants (cut-backs and maidens), and elsewhere that I have come across this year, have appeared dull in colour and ragged in outline; but I have no doubt it is sometimes bright and good, as so many good judges say so. My blooms were very late, and perhaps felt the change of weather. It seemed to come rather in the manner of Marie Rady, which we know is brilliant and glorious after a fortnight of fine weather; but the most miserable, dull, dirty thing ever seen if it be wet and cold.

Germaine Caillot.—I saw two good blooms of this. It is a very useful shape, the outer petals falling well down of their own accord from a good full ball in the centre; something the form, though longer in petal, of Violet Bouyer. I have heard this shape justly admired because "it makes the bloom look bigger than it really is."

Lady Helen Stewart.—Seems a useful Rose, very bright and telling, catching the eye at once, and a good grower.

Madame Montet.—This is not a new Rose, but has been effectually shown several times this year. It has large petals, which will atone for many defects if you can get it to stand, for it is certainly thin.

Mr. James Brownlow.—A seedling of Messrs. Dickson, is a cross between Paul Neyron and Marquise de Castellane, and one naturally fears it may be coarse. I have had one bloom, which came on a weak shoot, and had been bitten by a grub. There is no doubt of its being a large Rose, but I cannot say whether the shape will be regular and well defined. It is a great grower, and I am afraid seems inclined to "favour its pa" too much.

Sir Rowland Hill.—Certainly a beautiful and most effective colour; in other respects it seems just like Charles Lefebvre, and should be a great acquisition. My blooms have not stood very well, but it has been finely shown.

TEAS.

Cleopatra.—I have seen a very small bloom of this new seedling of Mr. Bennett's, which seemed promising.

Ernest Metz.—This Rose seems very changeable in colour, opening something like Jules Finger, and turning into, not the livid hue of that Rose (which is so objectionable), but a much paler tint, which I cannot describe. It seems to require a special education to write down accurately the separate shades of some of the Tea Roses, and he is a clever catalogue compiler who can please everyone. A good grower, and apparently quite a good Rose, large and well shaped.

Ethel Brownlow.—Very little shown this year. I do not know how this was. I did not get a bloom of any size, but it certainly is a charming shape.

Madame Hoste.—This also disappointed me, as the petals seemed thinner than I expected; but there are plenty of them, the blooms are large and capitally formed, and for a thinnish Rose it appears to be a very good one.

Mrs. James Wilson.—A new Rose of Messrs. Dickson. I have had one bloom, decidedly promising. One cannot judge well from a grafted plant, but it seems to be something in the way of Princess Beatrice, but more tinged with rose on the outer petals.

Princess Beatrice.—I have not been lucky with this, and have not seen it well shown. It is a good grower, and appears to be an early sort, that will be good with care and high cultivation.

Souvenir de S. A. Prince.—I believe this is a grand Rose. I have had two famous blooms, quite worthy to be shown in any twelve, off a tiny grafted plant. It seems quite as good a grower as Souvenir d'un Ami, from which it sported. Not so long in petal as Niphetos, but probably as large, because broader, and maintaining its shape when the outer petals fall; quite as pure in colour, but stouter, more solid, more lasting.

Of older Roses, the best of the year with me were, among H.P.'s, Marie Baumann, Madame Crapelet, and John Stuart Mill, these being better than ever before; and among Teas Princess of Wales especially and Madame Angèle Jacquier.—W. R. RAILLEM.

IRON FOR ROSES.

"DISAPPOINTED" quotes me as saying that iron is essential for the production of good Roses. I do not remember my use of the expression; but as iron is essential to the existence of every growing plant, good Roses cannot be produced without it. Other elements, however, are equally essential. I recommended a manure for Roses containing nitrogen, potash, phosphorus, magnesia, iron, and gypsum. The proportion of iron is small, only one thirty-third part of the whole, in the form of the sulphate. Why should "Disappointed" wish to substitute the oxide (there are several oxides of iron, to which does he refer?) If it is cheap, so is the sulphate, popularly known as green vitriol. All the recorded experiments within my knowledge, relating to the application of iron in the successful cultivation of the Rose were made with the sulphate; therefore I recommend "Disappointed" to use that salt, but on no account to omit the other elements of the manure suggested by me, if he wishes to grow good Roses. The application had better be made as a top-dressing immediately after the spring pruning.—EDMUND TONKS.

THE LONDON PARKS.

HAMPTON COURT.

THOUGH at some distance from the metropolitan district in which most of the other public parks are situated described under the above heading, yet Hampton Court is so easily reached by rail, and the journey is such a pleasant one, that few horticulturists who come to town with the object of inspecting such establishments omit this one from their tour, more particularly as the reputation it has gained under Mr. Graham's management has ranked it amongst the best kept places of its kind. The most direct way of reaching it is to travel from Waterloo to Hampton Court *via* Wimbledon, the station being at Moulsey, on the Surrey side, but within a few minutes' walk of the Palace and gardens. Another route, and a very agreeable one, is to journey on the Thames Valley branch to Teddington Station, walking thence through Bushey Park to the gardens, which are reached in twenty minutes or half an hour. The grand avenue of Horse Chestnuts is always beautiful in the summer months, though it attracts the greatest number of visitors when the trees are in flower, and "Chestnut Sunday" has become quite a recognised holiday for Londoners. There is still a third way of travelling to Hampton Court, but that is only available when the visitor has plenty of time at his disposal, as several hours are occupied in the journey from London Bridge, and there is only one boat a day, which starts shortly after 10 A.M. This can only be recommended when the weather is fine, but then it is a most enjoyable trip as the Thames scenery, equally from Kew to Kingston and beyond, is charming in the extreme.

Hampton Court Gardens have, apart from their antiquity and varied interest, acquired a considerable reputation for the superior manner in which the "bedding" is carried out. Carpet beds in particular have been made a special feature. But far from relying exclusively upon these, every effort has been made to introduce as much variety as possible, and considerable success has attended the experiments in this direction. Mixed beds of the character frequently recommended in these pages and described at other parks have been freely employed with good results. The long border by the Palace has also been utilised for a collection of the most effective hardy plants, which render it attractive from early spring to late autumn, the plants employed having been carefully selected with that object in view. No garden is complete without a border of this kind, and old gardens like the one under notice are above all most suitable for old plants and border favourites.

In turning to the carpet beds it may be observed that in nearly all *Echeveria secunda glauca*, with *Sedum hispanicum* var. *glaucum*, constitute the edging, the exceptions to this being where plants with similar coloured foliage form the groundwork, and then *Mentha* and the Golden *Stellaria* are employed in their stead. Taking these beds in order from the northern end of the gardens the first contains an edging of *Echeveria* and *Sedum glaucum*, inside which is *Alternanthera amœna*, followed by Golden Feather and *Mentha pulegium gibraltarica*, with panels of *Veronica candida* and *Alternanthera paronychioides*, all well disposed on a general groundwork of *Mentha*. No. 3 had a groundwork of *Mesembryanthemum cordifolium variegatum*, with a centre of *Alternanthera amœna*; on either side of this were arranged a Maltese cross, the one having *Echeveria Peacocki*, and the other *Sempervivum montanum*, both being outlined with *Echeveria secunda glauca*; there were also squares of *Leucophyton Browni*, and small circular panels of *Alternanthera versicolor*, while the rich and varying tints of other *Alternantheras* came out in a telling manner against the *Mesembryanthemums*. In carpet bed No. 4 an agreeable change has been introduced in the form of small Palms, *Pandanus Veitchi*, *Dracœna rubra*, the principal groundwork being composed of *Alternanthera amabilis* at either end, and *A. paronychioides* across the centre, the remainder being made up of small *Latanias*, set in a groundwork of *Mentha* and *Sedum glaucum*; there were also small plots of *Pellœa muscosa* and *Herniaria glabra*, in company with *Pachyphytum bracteatum* and *Cotyledon Schapflyus*. No. 5 was perhaps a little perplexing, and although partaking more of carpet designs than the majority was devoid of that decision which is characteristic in these gardens. No. 6

had *Echeverias* and *Sedums*, with *Herniaria glabra* next, while at each end were large circles of *Herniaria* and *Alternanthera paronychioides aurca* and *amabilis*, edged with *Echeveria Peacocki*, and having a central plant of *Echeveria metallica*, the remainder of the bed being barred with *Alternantheras* and *Leucophyton Browni*. In No. 7 *Veronica candida* predominated; this, in company with the golden forms of *Alternanthera paronychioides aurea* and major, constituting the leading plants employed. No. 8 had an edging of *Sedum* and *Echeveria*, with general groundwork of *Mesembryanthemum*, the centre being formed of *Echeveria Peacocki* and a single plant of a species of *Aloe*, while at the two ends are lyrc-shaped designs composed of *Leucophyton* and *Alternanthera*.

Apart from the carpet beds some were conspicuous for other plants. For example, one large bed had a broad band of Golden *Stellaria* for a margin, and next to this a still broader band of *Iresine Lindeni*, following which were silver and gold *Pelargoniums* and central blocks of *Coleuses*, with just enough *Viola Blue Bell*. This was an effective bed. Several other beds partook of the same character with slight variations. One bed had *Ficus elastica*, with *Ageratum* and *Dactylis elegantissima* beneath; another bed was conspicuous with scarlet *Phloxes*, *Souvenir de la Malmaison* Rose, and *Stocks*; and a bed of standard Roses had a delightfully fragrant companion in *Heliotrope President Garfield*. Scores of other beds were filled with *Pelargoniums*, while some had *Cannas*, scarlet *Gladioli*, and hybrid *Pentstemons*. Promising well for a future display was a large bed devoted to *Chrysanthemum Madame C. Desgrange*, margined with *Aster Amellus bessarabicus*. These two plants are of uniform height and flower at about the same time, and afford an illustration of what may be accomplished with good hardy perennials.

NOTES FROM A HERTS GARDEN.

PEACHES AND NECTARINES.

CROPS of these fruits this season have been or are very tantalising. The blossoms were abundant and strong, the "set" was good, and the fruit took the first swelling and continued it up to the size of Walnuts in capital style; then it, or most part, became and remained stationary, or nearly so, for several days, when it suddenly and unaccountably collapsed—shrivelling and falling in showers. These are some of the delights of gardening. We were anticipating (and appearances justified the forecast) a fuller and finer crop of fruit than usual. We had begun to calculate the time and manner of feeding directly the stoning was sufficiently advanced, and discerned in prospective dishes teeming with high-coloured, luscious fruit. Outdoor fruits, particularly Apricots, Peaches, Nectarines, and Figs were thin—next to nil, and Pears promised to add little, scarcely sufficient to give variety to desserts. Multiplying dishes of Grapes or Melons are poor apologies for variety; indeed, it only makes the want of the absentees felt more keenly, and prompts inquiry. The remainder of the Peaches fortunately were fine, but the Nectarines finer. Further, the Peaches were thinner than the Nectarines, yet they did not finish so satisfactorily. These remarks apply to the early houses, as the result as regards the finish is not determined in the later heated ones, yet there is every prospect of a similar issue. The trees in all instances made no attempt at stoning; the fruit alike in the early and late houses swelled only to the size of Walnuts, and then fell in quantity. The crop before stoning was not remarkably heavy, and after dropping it was not more than one-third of what the trees were capable or considered competent to carry. A notable characteristic was that the trees cast the fruits almost totally from the upper part where the wood is strongest, the lower part of the trees retaining the greater part of their crops. It may be further noted that the large flowered varieties cast more fruits than the small flowered, and that the Nectarines shed less fruit than the Peaches. I may further reiterate the fact that the Nectarines finished much better than the Peaches; indeed the Nectarines, particularly that very fine early variety, Lord Napier, some of the fruit of which rivalled the early Peaches or Hale's Early in size, were superlative. Finally, some of the fruit split at the stone, and in every instance was confined to the large flowered and large fruited varieties only; in fact the larger the fruit the greater danger of its being spoiled by stone-splitting.

Such are the facts, and my object in troubling you, Mr. Editor, is to elicit, if these lines are thought worthy of a place in "our Journal," the views of others upon the matter named. My views are that the casting of the fruit before stoning was a result of the cold, sunless, and wet weather of 1888, the wood not being solidified as made, the sap imperfectly elaborated, and the matter stored in the wood and buds inadequate to the maintenance of the fruit in its early stages. The wood, in brief, was not sufficiently ripened, in which view I consider proof conclusive in that of the fruit not being cast on the wood at the lower part of the tree or trellis, where the growth from position alone was less strong than at the upper part, and of necessity having less sap, would under the disadvantageous laboratory conditions of the season attain to a great extent of assimilation, ripening of the wood, and perfection of the buds, than growths much stronger. This is my view of the case—viz., grossness or a tendency that way is in the direction of unfruitfulness, and to that cause exclusively we attribute the casting of the incipient fruits. The grossness intended is not that known as characteristic of sterility, but that of ordinary growth in consequence of the unfavourable climatic conditions insufficiently hardened and stored with assimilated material. Of course those having full crops will attribute the disaster to errors of culture, alleging that a little

warmth in the pipes before and after the crops were gathered with sufficient ventilation to cause evaporation, would have insured the requisite elaboration of the sap, the solidification and ripening of the wood and buds. Such are fortunate, and can take as much credit as they like to themselves without anybody being the wiser, but what we want to have is information from those that have experienced similar disaster, and the way they have managed to hobble safely out of the difficulty on to safe and certain ground. My deductions are that the fruit on the lower part of the tree were a consequence of the greater evaporation through proximity to the hot-water pipes, combined with the lessened vigour, and that had enough air been given with a diminished amount of atmospheric moisture in the structure all would have been well with the upper as well as the lower part of the tree. This points to the necessity of a free circulation of air in the early stages of forcing, in order to have short jointed sturdy growth, well developed stout textured foliage, the growths thoroughly solidified as made through the perfect elaboration and assimilation of the sap, which is the best of safeguards against insect pests and fungoid growths, and the only growth on which reliance can be placed for the ensuing crop. The trees in an unheated house singularly enough have retained the fruit equally on the upper and lower parts of the trees, and here the ventilation was free from the commencement and right away to the fruit taking the last swelling for ripening, when encouragement was given by a moderation of the ventilation and by early closing, so as to assist the ripening, and the growths being thinner and the moisture less the wood was more evenly ripened. Why have the trees in the unheated houses not cast their fruit equally with those in the heated structures? and why should the apparently less ripened wood of the unheated house trees retain the fruit whilst that of the apparently much better ripened heated house trees were throwing it off? Surely the confined atmosphere to which early forced trees are subjected in a cold sunless season is contrary to Nature's requirements, the solidification of the growths (and the formation or character of the buds given) as made, and which no after treatment can change.—UTILITARIAN.



THE WEATHER.—Until the present week showers were of daily occurrence in the metropolitan district, and, indeed, appear to have been general, occasionally accompanied with high winds, which denuded many trees of fruit. Bright and calm weather has succeeded, and it is hoped will continue for the in-gathering of the harvest and the well-being of fruit trees.

— WE are requested to state that the BEDFORD AND BEDFORDSHIRE CHRYSANTHEMUM SOCIETY'S SHOW is fixed to be held on November 21st and 22nd.

— A NEW CHERRY.—In your report of the fruit department of the Taunton Deane Horticultural Society on page 162, mention is made of a new Cherry shown by Mr. R. Nicholls, gardener to Earl Fortescue, Castle Hill, South Molton, Devon. It is well described by the writer as "a large form of Black Tartarian," equal in point of quality and larger in size. In addition to Morellos, the only other Cherries shown were Governor Wood and Florence, but they bore no comparison to the new variety. It is named Castle Hill Seedling, and came as an accidental seedling at Castle Hill Gardens. It was cared for, and Mr. Nicholls has a tree of it upon an east wall, where it does well. It is an object of special interest to Earl Fortescue, and the fruit is much appreciated by him. The tree is hardy, and it always crops well. It would prove very useful for purposes of comparison if Mr. Nicholls could send a dish of fruit to a meeting of the Fruit Committee of the Royal Horticultural Society. It is perhaps too late to do it this season, but the Committee should see it another year. If sufficiently distinct from existing sorts, it is a very valuable late variety.—R. D.

— FLOWER SHOW AT THE POET LAUREATE'S.—The annual Exhibition of fruits, vegetables, and flowers in connection with the Freshwater and Yarmouth Horticultural Society, was held on Wednesday and Thursday last, in the beautiful grounds of Farringford Park, by kind permission of Lord Tennyson, the Poet Laureate. The weather was exceedingly unfavourable on the opening day, and as a consequence but few visitors attended. On Thursday, however, there was a more numerous attendance. The Exhibition was held in two large marquees near the Poet's residence. There was a good show of fruit and flowers for competition, in addition to which some lovely floral specimens were exhibited by Lord Tennyson, Mr. E. Granville Ward, J.P., Mr. H.

Somers-Cocks, Mrs. Martin (of Chislehurst), and Colonel Crozier, J.P. Some fine samples of honey were also exhibited, and Mr. W. R. Marshall showed an interesting observatory hive.

— SOME REMARKABLE ONIONS.—On the occasion of the annual Exhibition of the Basingstoke Horticultural Society on August 20th, some Onions, remarkable for their great size and handsome appearance, were shown by Mr. Noah Kneller of Malshanger Park Gardens, Basingstoke. The variety is Ailsa Craig, raised at Culzean Castle, Maybole, and the twelve bulbs shown averaged $2\frac{1}{2}$ lbs. each, or 30 lbs. weight the twelve. In 1888 Mr. David Murray, the raiser, grew one bulb to the weight of 2 lbs. 7 ozs., and twenty-four bulbs weighed 46 lbs. 12 ozs. It is needless to add that Mr. Kneller's Onions were by far the best in the class for twelve Onions. Mr. H. Deverill of Banbury, who is putting this new Onion into commerce, added a special prize of one sovereign to the sum named in the schedule by way of commemorating the event. It is matter for regret that the mildew is making great havoc with the Onion seed now in course of ripening, and this complaint appears to come from all the Onion growing districts, Bedford especially. It is all the more to be regretted, as there was a scarcity of good bulbs last year for planting out for seed purposes.

— SUCCESSFUL BEDS OF MUSHROOMS.—This would appear to be an appropriate heading to what follows:—Looking in at Mr. Oliver's pretty garden recently, Waltham Lodge, Goldhawk Road, Hammersmith, we noted two beds, one outdoors, one indoors, the latter in a dark cellar. They were spawned on July 27th, that indoors being the more forward, and were beginning to button on August 26th—the day of our visit, scarcely a calendar month. A piece of good work this, on which Mr. Eimes, the courteous gardener, may be congratulated. He attributes his success chiefly to sweet manure. At the same garden we noted an innovation, this being an arbour of Vegetable Marrows! Trained in this way, some 6 feet in height, their pendent fruits had a novel and pretty effect.—B.

— TAKING all things into consideration, PINE APPLE NECTARINE is, in my opinion, the finest of all Nectarines. Under good cultivation it attains a large size, is of excellent flavour, and when possessing that rich orange colour suffused with crimson which is peculiar to the variety it is not easily surpassed in appearance. Some cultivators experience great difficulty in producing examples that answer to the above description, as it is often met with slightly shrivelled on the top of the fruit before the base is thoroughly ripe, and the whole appearance of the fruit being spoilt by rusty brown spots over the greater part of the surface. This is caused by exposing the fruits to too much sunshine, in conjunction with the shoots being trained too close to the glass. When the trees are trained about 15 or 18 inches from the glass, a thin coating of whitewash should be syringed over the roof as soon as colouring commences. Should the weather prove very bright another sprinkling ought to be given when the fruits are nearly ripe; then if other cultural details are properly attended to, specimens of fine appearance as well as quality will be produced. When there is sufficient room to train Nectarines of this variety from 2 feet 6 inches to 3 feet from the glass the fruits will colour splendidly without shading.—H. DUNKIN.

— A CYCLONE IN SHROPSHIRE.—North Shropshire was on Thursday, the 23rd inst., visited by a perfect cyclone—a phenomenon hitherto unheard of in England. Incalculable damage has been done to property and crops for miles around. Without any warning the cyclone came on with a great roar, which for the time drowned all ordinary sounds as if it were the rush of a mighty body of water. An intense feeling of terror was created. This deafening sound lasted about five minutes, and in that short space of time trees were uprooted and stripped of their branches, haystacks were bodily displaced, houses were partially unroofed, and barns and outbuildings were demolished. The cyclone appears to have been first felt at Mr. Sherwood's of Waterloo, where a number of Plum and other trees were uprooted. It then went over the canal, past Bostock Hall on to Whixall Hall, which suffered most. A part of a large Beech tree was carried 150 yards, crashing up against the strong walls of the Hall. Orchards, gardens, cornfields, and the lands around the Hall suffered considerably. The cyclone took a westerly course, about three and a half miles in length and 150 yards in width, expending itself at Tilstock Park, four miles from Whitechurch. All who witnessed it say it first appeared like a great white mass of vapour.

— THE annual Horticultural Show in connection with the RYDE EXHIBITION AND HORTICULTURAL ASSOCIATION was held on Thurs-

day, August 22nd, in the picturesque grounds of the Isle of Wight College, Apley, near Ryde. The Chairman of the Committee is Mr. Davey, who, with Messrs. D. Fowler, Cooke, Green, Butcher, Eldridge, J. V. Brook, and Mr. James Eley (Secretary), did yeoman service. The Show was an extremely good one, the exhibits being choice and numerous. Owing to the unsettled state of the weather there was a perceptible falling off of visitors. There were no fewer than ninety-four classes of exhibits. The following were the principal prizetakers:—Flowers.—Mr. H. Grose Smith, The Priory, St. Helens (gardener, J. Earl); Mrs. Edgar Ratcliffe, Ryde (gardener, J. Attrill); Colonel Atherley, Shanklin (gardener, J. A. Ventin); Mr. James Woods, Ryde (gardener, H. Quinton); Mr. J. J. Linnington, Belle Mead, Newport; Sir H. Daly, Ryde House, Ryde (gardener, G. Caffin). Vegetables and fruit.—Colonel Atherley, Shanklin; Mr. A. A. Carre, Apley Rise (gardener, G. Burden); Mr. J. Woods, Ryde; Mrs. E. Ratcliffe, Ryde; Mr. T. L. Winthrop, Ryde; Mr. C. Taplin, Ryde; Mr. C. Simmonds, Brading. Mr. Orchard, Bembridge Hotel, exhibited a magnificent table of vegetables (not for competition), Turnips, Carrots, Onions, Beet, and Potatoes grown on the reclaimed land at Bembridge. After the Show this capacious table-full was presented to the infirmary by Mr. Orchard.

— AT a meeting of the Council of the ROYAL CALEDONIAN HORTICULTURAL SOCIETY, held on the 7th August, 1889, it was resolved to hold a SPECIAL EXHIBITION AND CONFERENCE ON PLUMS, in connection with the Society's Autumn Show, in the Waverley Market, Edinburgh, on the 11th and 12th September, 1889. While collections of Plums are solicited from all parts, for comparison and instruction, the chief object of the Conference is to utilise the favourable opportunity presented this season by the fine crop of Plums in Scotland, for gaining useful information about them, comparing their merits, and correcting their nomenclature. All who are interested in the growing of Plums are therefore invited to send as complete a collection as possible of the varieties (ripe or unripe) grown in their district; and as the object is solely educational, there will be no competition and no prizes. It is not necessary that the fruit should be grown by the sender; but those sending collections from a district should specify the place where each sample has been grown. No limit will be put as to the number of varieties which any contributor desires to send; but the number of fruits of each variety should be from three to six, according to circumstances. The Council are anxious to procure a complete representation and record of the varieties of Plums grown in Scotland; therefore each variety should be distinctly labelled with the name, or names, under which it is known in the locality, and each collection should be accompanied by all the information possible about the climate, altitude, exposure, soil, methods of cultivation, and other particulars, which will be of much value to the Committee in drawing up their report. For this purpose forms will be supplied to all growers on application to the Secretary. The specimens being strictly for examination and instruction, they must necessarily be at the disposal of the Council. In the case of a new or unknown variety, specimens of the fruit should be accompanied by a bearing branch, with fruit and foliage, to show its character and bearing qualities. Intending exhibitors must give notice to the Secretary or Assistant Secretary, in writing, not later than Wednesday, 4th September, stating the number of varieties they intend to exhibit, for which space will be allotted and plates provided by the Society. The Council will pay the carriage of any Plums sent to the Exhibition and Conference, and will also see that they are carefully staged for the inspection of the Committee; but they will not be held responsible for any error, damage, or loss of fruit consigned to them, although all possible care will be taken of it. Collections of Plums sent by rail, or otherwise, must be addressed to Mr. William Young, Assistant Secretary, 18, Waverley Market, Edinburgh, and forwarded so as to be delivered not later than Monday, 9th September. Exhibitors staging their own fruit will do so on the morning of Wednesday, 11th September; and all must be staged and the Hall cleared for the Committee by ten o'clock that morning.—MALCOLM DUNN, *Convener of the Committee*.

KETTON HALL GARDENS.

KETTON HALL is a familiar name in the gardening world from its frequent mention in reports of fruit exhibitions and the many prizes that are awarded to the produce grown by Mr. W. H. Divers, chiefly Peaches and Nectarines. J. T. Hopwood, Esq., the owner of the splendid houses and trees, evidently takes great interest in his gardens, and estate generally. This he acquired by purchase a few years ago, and erected thereon a handsome and commodious mansion of Ketton stone, which from time immemorial has been famed for its free working and durability. One or two glass structures were found in the gardens attached to the old hall, and these still remain. The Vines in them

have been greatly improved and bear useful Grapes, with almost certainly better to follow. But Ketton, in gardeners' parlance, is not a "Grape place," and in truth few lovers of the princely fruit can inspect the fine Peach houses without feeling a wish to see also one or two vineries as worthy companions thereto. With the Peach houses, trees, and fruit the most exacting must be satisfied that Mr. Hopwood has done wonders, and what his gardener has done his opponents at such shows as the Crystal Palace, Regent's Park, Liverpool, Leicester, York, Brighton, Edinburgh and others, have in remembrance. Eighty-seven prizes won in the best competition during the past four and a half years is a very good record, especially as by far the greater number were firsts, and there is not a gardener in the kingdom who bears his honours more meekly than does Mr. Divers. He is a thorough gardener, whose ability is equal to his devotedness to his work, and whose attention to the various details, each small in itself, but in the aggregate of great moment, has enabled him to achieve a great deal more than local fame.

No finer Peaches and Nectarines are grown in the kingdom than at Ketton, and in few gardens is their culture equalled; but it must be said in few if any are such houses provided, one of these being, so far as I know, the finest peachery in England. It is a curvilinear structure, substantially built, of iron chiefly, and rests on low walls faced with dressed stone. It is glazed, as are the other new structures, on the Rendle system, and in every respect answers its purpose well. This noble Peach house, of which the small engraving from a photograph, fig. 25, represents fairly well, is 258 feet long, 28½ feet wide, and 17 feet high. It is known as the Carlsbad house, I think because it was erected as a surprise for Mrs. Hopwood on her return from a sojourn at the health resort whose name it bears. The trained trees are planted about 3 feet from the sides, or whatever the exact distance may be ample room is afforded between the trellis and the glass for working purposes. The trellis reaches to what may be termed the shoulder of the curve on each side; thus light falls directly from the top of the house over the central path and to a sufficient extent over the side borders for fruit trees in pots. These consist of Peaches, Nectarines, Plums, Pears, and Apples, and as they bear good crops of excellent fruit the avenue thus formed is highly interesting, and enables a great number of varieties to be grown and tested.

The trained trees are as fine as trees can be, and produce fruit as large and good as trees can bear. The growth would almost frighten some "hardwooded" men by its vigour. Small firm wood is their ideal, but Mr. Divers knows very well that such fruit as he gathers could not be perfected on small twiggy shoots, no matter how hard they may be. He likes them strong, but then—and here rests one of the secrets of success—he trains them thinly. The leaves do not spoil each other by crushing and crowding, but have space for free development, and then, with generous support at the roots, become strengtheners of the tree and storers of fruit-producing matter. But though the growth is strong it is short-jointed and firm, because of the light to which all the leaves are exposed, their freedom from insects, and the firm and shallow well drained borders in which the roots are working. When we find such trees as these so large, so full of vigour, and bearing such splendid fruit in a depth of 18 inches of soil, what folly it is to have borders as deep again and as light again, as many are, in which the trees are not, nor cannot be, half so good. But the soil may be considered to be of extraordinary quality. It is not. The natural soil of the district is by no means of the highest order of fertility, and is far from equalling the best in many agricultural districts. It is not bad soil, but has to be made better by good treatment before good crops of vegetables and roots can be grown in garden or field.

It is of very little use describing gardens and praising everything that is found good in them without gaining and imparting such information as can be gathered from an inspection of successful work. Success in Peach growing depends on good management on the lines above indicated, and no soil, no matter how good it may be, even to its containing the exact constituents as determined by analysis, can give anything approaching the best results if other important points of culture be overlooked. Train in the growing shoots an inch or two apart, thus huddling the leaves together as if they were of no value; let red spider have its fling; let the borders be so deep and light that boards must be used for stepping on to prevent the feet sinking in, then the precious and scientifically compounded soil avails little, and far better results may be attained with soil from a Potato field when the other cultural requisites suggested are provided.

May I leave Ketton for a moment or two for an illustration of the soundness of the routine I am endeavouring to enforce? A few hours before writing these lines I was at Chiswick. Last autumn or winter, or this spring (I forget which), Mr. Barron planted a number of young Peach trees against the back wall of a long lean-to house. He had no turfy loam, and apparently did not trouble about that. He knew the soil in the garden grew good hardy fruit and vegetables, and simply had the quantity required for the Peach trees wheeled from where it was most handy and could be best spared from the garden, mixing a few crushed bones with it. I have examined the trees to-day, and been on the border. It resembles an asphalt path in firmness and smoothness. Not being quite a featherweight, I can venture to say there is not a man who reads these lines who by stamping and jumping on that border could make any material impression in it. And what about the trees? The wood is not weak and hard, like wire, but stout and short-jointed; the branches thinly disposed; the leaves fully expanded, deep green, thick in texture, clean. The border cost a mere trifle, yet if the cultivator minds, and he generally does "mind" when he has a chance

of accomplishing an object, he will have a good crop of excellent Peaches and Nectarines next year.

I now go back to Ketton. There is another span-roofed Peach house there, small in comparison with the other, for it is only 102 feet long, 22½ feet wide, and 13 feet high, but built and glazed in the same way. Every inch of trellis on both sides, from base to apex, is covered with trees, such as anyone may be proud to own. In training, health, and cleanliness no fault can be found with them, and it follows that they bear the finest of fruit. What that means I will state by-and-by. There is yet another Peach range to be noticed; this time a lean-to, 186 feet long, 11½ feet wide, and 13 feet high, glazed like the others. It is in three compartments—early, midseason, and late. It is a fine range, but would be finer and better if converted into a span-roof, the aspect not being the best for its present form. The trees, as in the other houses, are models of their kind. The varieties, as they occupy each house, are not specified, but a digest from the whole will be given and selections for succession and exhibiting named. There is a span-roofed Cherry house, 91 feet long, 16½ feet wide, and 10 feet high, occupied with the best varieties in cultivation, and Maréchal Niel Roses, which are more extensively and better grown at Ketton than in any other private garden I have seen. There remains still another handsome span-roof, called the Camellia house, 45½ feet long, 30½ wide, and 17 feet high. The roof is covered with Maréchal Niel Roses, across the ends are fine Nectarine trees; on each side of the central path Camellias, Palms, and miscellaneous plants; and near one end a hedge of Ivy-leaved Pelargoniums that reaches from the ground nearly to the roof. Two varieties were planted, but Madame Crousse is by far the more free and floriferous, and produces trusses of blooms in thousands. A small

Wales, Dymond, Sea Eagle, Princess of Wales, and the Nectarine Peach. These will afford a supply in a cold house in the midlands from the middle of July to the middle of October. Lord Palmerston is excluded, because the fruit, though large, is pale and inferior in quality. The best Nectarines he considers are Lord Napier, Stanwick Elruge, Dryden, Goldoni, Rivers' Orange, Pine Apple, Byron, Spencer, and Victoria, these being alike good for show and for private use, and are named in order of ripening.

Mr. Hopwood derives pleasure in sending boxes of fruit to his friends, and perhaps no finer Peaches and Nectarines have been seen on royal and aristocratic tables than the selected examples from Ketton. They are packed in boxes 18 by 12 inches, and 4 inches deep.

A little must be said about the culture of Maréchal Niel Roses, of which 9000 blooms are cut yearly from the large Peach house—chiefly from one end of it, about a third or fourth the length of the structure, though some are grown at intervals the whole length of the central path and trained straight up to the roof. The Peach trellises in the Maréchal Niel end of the structure do not follow the arching of the roof, but the trees are planted about 6 feet from the sides of the house, and the trellises are taken straight up to the roof, the trees being trained as if to a wall, and on the borders in front of them up to the central path are arranged fruit trees in pots. The Roses on Briar stocks are planted 3 or 4 feet apart next the boundary walls, and there is thus ample room to pass between them and the Peach trellises. The growths are trained up wires about a foot from the roof, until they reach a little above the top of the Peach trellises, and the wires then stretched tightly over the space, and when covered with Roses form, so to say, when in flower, a flat ceiling of golden blooms. These are of the first

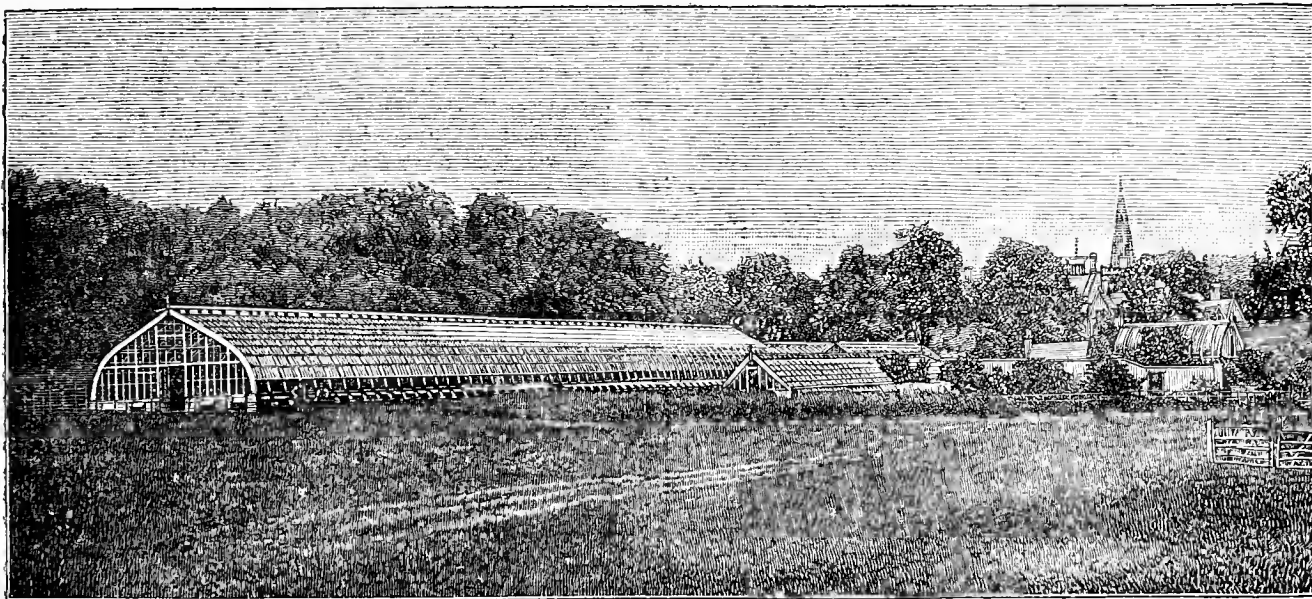


FIG. 25.—PEACH HOUSE AT KETTON HALL.

conservatory, Orchid house, and stove adjoin the mansion, and are attractively furnished with well-grown plants. As will be perceived, there is a considerable extent of glass at Ketton; indeed, the various structures cover nearly half an acre of ground. Mr. Divers prefers Weeks's upright tubular boiler for heating, for although others are set, in view of contingencies, he finds the one named the most certain to work continuously and uniformly over the greater length of time after stoking.

On an average about 7000 Peaches and Nectarines are gathered yearly. This shows that the trees are not thinly cropped for the production of sensational fruit; but good crops are grown, and the vigour of the trees with generous support enables the fruit to attain a more than average size. The shallow, well-drained borders permit of the free use of water, and it is given with no sparing hand when the crops are swelling, 3000 gallons at a time being applied in the "big" house. I do not remember seeing Peach borders kept so moist as these were, and both the trees and the fruit showed how they enjoyed and benefited by the liquid food. As ripening approaches moisture is lessened and the wood gradually and surely matures.

The largest fruits gathered are of Lord Palmerston, weighing 16 ozs., and measuring 12½ inches in circumference; Sea Eagle and the Nectarine Peach, 13 ozs., and measuring 12 inches; Princess of Wales, 12½ ozs., but an inch less in diameter than the two last named; Barrington and Prince of Wales, 12 ozs. and 11 ozs., and 11½ and 11 inches round respectively; but taking all their qualities into consideration, Mr. Divers recommends the following varieties for exhibition purposes:—Royal George, Crimson Galande, Prince of Wales, Bellegarde, Stirling Castle, Early Albert, Early Crawford, Princess of Wales, Barrington, Dagmar, Sea Eagle, and the Nectarine Peach. For private use in succession his choice is Alexander, Early Louise, Early Albert, Royal George, Stirling Castle, Goshawk, Crimson Galande, Prince of

size as produced by vigorous annual growths, for after flowering, or about June, all the shoots are cut back as closely as Vines are at the winter pruning, there being nothing left but bare rods and two sets of spurs, the lower near the base of the roof, the upper near the top of the trellis. By syringing and general good management the buds break strongly and produce "fat" growths, those from the base soon reaching to what may be termed the ceiling, those from the higher spurs extending across it. The term ceiling is a misnomer, but employed to make the method clear. When I saw them at the end of July the spring-like growths were about 2 feet in length; they are now probably more than thrice that length, and may have extended or nearly so over the desired space. I have seen them attain a length of more than 20 feet, and thicker than an ordinary pencil, after the summer pruning, and those are the growths for producing magnificent blooms. Some persons I know have tried the plan and failed, but that was their own fault; they erred culturally somewhere, and I am convinced both by experience and observation that the plan described, subject to such modifications as local circumstances suggest, is the simplest and best for growing the greatest number of the finest blooms under glass, and I am positive that in no other way could Mr. Divers cut 9000 of such as connoisseurs covet from the plants in his charge. Some persons appear to be impressed with the idea that for growing Peaches and Maréchal Roses satisfactorily the roof sashes must be moveable, and removed in the autumn. Without saying anything against the practice the fact may be noted that at Ketton the roofs of the houses are fixtures.

Not much can be said about the outside department, though flowers, fruit and vegetables are equally cared for and cultivated, as is fruit under glass. Chrysanthemums are in a most promising state. They receive the immediate attention of a son of Mr. Tunnington, of Liverpool the said son being the foreman at Ketton, and I will, Mr. Divers says, make someone a fine gardener some day. A "curled" wall standing

east and west is somewhat of a curiosity, as it is formed of a series of segments of circles, and thus presents various aspects; though no difference is apparent in the trees, the Morello Cherries on what may termed the north side are equally good whether they face due north or occupy the "curls" to the east or the west.

On the south side of another wall I found what I did not know before, and what I suspect many other persons do not know—namely, that the Alexander and Waterloo Peaches are, if not positively identical, so nearly alike that in no one character of the leaf or fruit is the difference discernible. The trees were planted on the same day, and fruits of both ripened on the same day, of the same size, same shape, same colour, same quality. The trees came from Sawbridgeworth, therefore it may be assumed both were true to name, as Mr. Rivers was the introducer of these early American Peaches, and the Ketton experience is commended to his distinguished consideration.

Mr. Divers has the park, farm, stock, and everything outdoors under his charge. The crops are excellent, and he has proved the value of the chemical manures advocated in the Home Farm department of this Journal, and estimates that an investment of £12 in grass manure yielded a profit of £30 in the increased yield of hay. No one can visit Ketton without admiring Mrs. Hopwood's splendid herd of Jerseys, some of which have won the highest honours at the Royal and other great shows. The working of machinery for various purposes by water power and turbines arrests notice; and if the visitor is privileged to enter the mansion he will find such an organ room and such an organ as he will have a difficulty in finding the equal in a family home; and further, if he is taken behind the scenes to "see the bellows blow" he will not forget it. The magnitude and mechanism of the whole arrangement cannot but surprise the outsider who for the first time gets inside the chamber, where the voice of the great instrument is supplied by hydraulic power, set in motion by touching a button in the room near the organ. Mr. Hopwood is a lover of music as well as of fruit, and an expert in both. Not satisfied with growing Peaches in England, he has "gone in" for Orange growing in Florida, and judging by his splendid photographs, for in this art he is skilled also, his mansion at Winter Park, Orange County, with the plantations surrounding, his estate must be very delightful. Of this Mr. Wm. Downs, Mr. Gilbert's foreman at Burghley, has been appointed manager, and goes out to "boss the niggers" in the autumn. He has no doubt received lessons from his "great chief" that will be of service, for Mr. Gilbert is not a better cultivator than he is a "manager," and an admirable trait in his character is his real friendliness to worthy young men, and his readiness to help them on in life. But I must stop, or my great chief will be after tomahawking me for taking up so much space in his Journal.

Ketton, I may add, is on the midland line between Leicester and Peterborough, and the station is within ten minutes' walk of the gardens. Mr. Divers' house is opposite the entrance gates, and the presiding genius there makes his visitors desirous of staying a little longer.—W.

THE WEATHER AND THE CROPS.

ALTHOUGH there has been no editorial invite for communications on this subject, as was the case last year, I have ventured on penning a brief report on the crops here. Taking fruit first, I have chronicled a total failure here of that important winter fruit, the Apple; the caterpillars never so much as allowed the trees to flower, so under these circumstances we could not reasonably expect Apples. The trees are, however, making good and clean growth, we therefore look forward to compensation next year. Strawberries were a good crop, as were Raspberries, Red and White Currants, while Black Currants were very light. Gooseberries were a remarkably heavy crop; after thinning for preserving, tarts, &c., many branches broke with the weight of fruit, and pleasant to relate, not a caterpillar was visible among the bushes the whole season. We have one Fig, at least there was one yesterday; it is only fair to add we have but three trees. Two Peach trees between them contrived to contribute three Peaches to the dessert in season on the 21st inst. Of Plums we have a good crop of Magnum Bonums; no other variety is bearing this year. We had a fine crop of Chisel Pears, there are a few of Doyenné d'Été, all the other trees are resting this year from fruit-bearing. Cherries of all kinds were a good crop. Apricots are here represented by only one tree; it may be that it objects to being isolated, at all events it has been five years planted and never yet borne a fruit. I have come to the conclusion that that portion of the wall might be more profitably employed. Nuts of all kinds are a very light crop. Thus ends my record of the fruit crops for 1889.

Flowers of all kinds have, until latterly, done remarkably well. Roses were never so good as this year. During the last few weeks we have rain more or less (most frequently the former) every day, and, with the exception of Begonias, all summer bedding plants are terribly washed out. I have never seen the land so wet or the ponds so full as during this week. The rainfall on Monday 19th last, day and night, was 1·2 of an inch. A good deal of hay is washed away in the low-lying meadows.

Vegetables, taken on the whole, are very satisfactory. The only crop unsatisfactory is Beet. I made two sowings of this, and obtained the seed from one of the leading English firms, and the best house in the south of Ireland, and now there is not half a crop. Onions are a splendid crop, the best I have had yet, and this year I have succeeded in getting a decent crop of Carrots for the first time free from maggots. Potatoes are badly diseased, but the tubers are a good size, while the quality is excellent when cooked. Tomatoes on outside walls are carry-

ing a fine lot of fruit and just commencing to ripen. I have tried ridge Cucumbers this year here for the first time, and they have proved a decided success.—R. WELLER, *Glenstal Castle Gardens, Limerick.*

[We are always glad to receive reports of this nature, and we thought this was understood by our readers.]

THE VIOLET, ITS CULTIVATION AND DISEASE.

[A paper read by Mr. M. A. Hunt before the Society of Indiana Florists.]

IN relation to soils most suitable for the Violet, having tried several with varying results, am satisfied that a heavy loam is the best; by this I mean one which will not break or crack though the admixture of sand be very slight. As to the method of growing, I do not believe that far north it is advisable to grow them in frames, either with or without fire heat, the uncertainty of the weather rendering it difficult to clean the plants properly, or gather the flowers with any degree of regularity. Give them bench room near the glass in a house by themselves, where the temperature can be kept under perfect control. I have found them to thrive best when kept about 10° above freezing at night, and on sunny days maintaining as low a temperature as possible without chilling the plants. The small grower who requires but a few each day for his own work, would in my opinion save money by buying of a brother florist who raises them in large quantity, or of some commission house, rather than undertake to grow a few under sash or in a house with other plants.

Of the disease to which the Violet is subject much has been written during the past year, but I have failed to see any cause assigned that was not disproved by the practice of other growers in different localities; methods which in the one case resulted in failure, in the other proved successful. So serious has this disease become that many large growers have entirely abandoned their cultivation, and it will be remembered Mr. Siebrecht, of New York, offered a reward of 100 dols. to anyone who would solve the problem, and notwithstanding many writers have given their experience with the pest, as well as advanced theories and surmises as to its cause, I still have to learn that any of them have drawn on friend Siebrecht for the reward.

The true solution may be as far in the future as ever, but in a visit not long since to Mr. John Cook, of Baltimore, Md., he was able to show results, the fruit as he believes of careful thought, observation, and experiment, which it seemed to me would be of interest to Violet growers to know. It will be remembered that Mr. Cook was the originator of that charming variety, Marie Louise, which was first placed on the market in 1872, and he now has two new varieties, the rose-coloured Mme. Millet offered last spring, and another, a sport from Swanley White, which he calls Robt. Garret, not yet distributed. In colour this resembles Neapolitan, but its promise of supremacy is in the great size of the flowers. The original stool as seen in January a year ago literally bristled with buds, while one fully expanded flower was 1½ inch in diameter by actual measurement. Mr. Cook grows about 120 sashes of Violets annually, and a varied experience of forty years in their care, coupled with the magnificent appearance of his plants at the time I saw them, would seem to show that, whether his theory is correct or not, his practice brings success.

He stated that the disease appeared with him about ten years ago, Marie Louise, which he had then been cultivating about eight years, being so much affected as to become practically valueless. The plants of this so badly affected that season were grown on his lowest bottom land, the disease showing itself about August 1st, previous to which the stools had been very large and fine. The following season, having some planted in frames for summer growth on his highest land, he noticed early in September that the stools under the sash rests, or bars of the frame, were clean and healthy, while those exposed to the full rays of the sun were badly affected with the disease. At first he thought this was the result of shade, observation in another line tending to confirm him in this conclusion, and this was the Pear blight. Among his fruit trees was a row of Pears, west of which ran a row of large evergreens. Both rows were at such an angle as to cause a complete shade to cover the Pears from eleven o'clock through the day. Every tree so shaded was free from blight, while trees at either end of the row in the full sunlight were much diseased. But to return to the Violet. Careful and patient watching convinced him that it was not the shade that prevented, but the dew that caused the mischief, and his theory is this:—The same fever-producing agency—be it what it may—which will bring a strong man down when exposed for any length of time to the dews and miasmatic influences of the night air, is the producing agent of the disease in the Violet. The drop of dew on the leaf exposed to an August sun evaporates, leaving whatever there may be of poison in a concentrated form on the leaf. Acting on this theory he plants all his Violets for summer growing in narrow beds, and as soon as there are any signs of dew covers them by stretching waterproof fibre cloth on frames so prepared as to keep the cloth well above the plants, thus securing a circulation of air. The covering is carefully removed in the morning, and the same process gone through with each day until they are housed in winter quarters.

Whatever may be thought of the theory as to the cause, the cure with him seems to be effectual, as plants grown near the others and given the same treatment in every way, save in the matter of night covering, are badly diseased. We are apt to look upon long continued, intelligent and successful methods as proofs of the system followed, and if any of our Violet growers desire to test this method for themselves, and should it prove as effectual with others who have been troubled

with the disease as with Mr. Cook, I have no doubt he could be prevailed upon to receive Mr. Siebrecht's cheque for 100 dollars.



TAKING THE BUDS.

In your issue for the 15th inst., at page 135, there appears a very interesting paragraph by "A Four-years Experimenter" about "taking buds of Chrysanthemums." I would like, through the columns of your valuable paper, to detail my experience in taking "buds" to appear at the stated time. In this locality, which I expect will be reckoned the "north of England," I agree with him that it is scarcely possible to obtain good and perfect flowers of Boule d'Or from natural grown plants, no matter when they are propagated. I have three plants of that variety which were rooted in a frame in a cool Peach house the third week of February; they were transferred to 6-inch pots 22nd March, thence to a cold frame outside. I pinched them on 24th May, and finally potted them on 3rd June, they being at that time 22 inches in height. They grew exactly 24 inches before showing their crown bud, which I "set" on the 16th inst. Madame C. Audiguier I pinched 29th May, and set its buds on the 15th inst. I may mention that it grew 4 feet before showing the crown bud. Comte de Germiny, from plants propagated in December of 1888, and allowed to break naturally, have shown their crown buds this date—viz., 19th August, as has also Mdle. Lacroix, Elaine, Ralph Brocklebank, and Golden Empress of India. Buds of Duchess of Albany I expect in a day or two from plants pinched on the 14th May. I do not think good flowers can be had by taking the buds any earlier than the 10th of August.—A. INNES, *Duncombe Park Gardens, Helmsley.*

"SETTING THE BUD" v. "TAKING THE BUD."

WE have now arrived at the most anxious time in the cultivation of the Chrysanthemum, I allude to "taking the bud." Now this has always been a puzzle to me why it is not called "setting the bud." After thinking it over I come to no other conclusion than that it is done simply to mystify young beginners as much as possible. I well remember some nine years ago, just as I was beginning to know something about crown blooms, when in conversation with a now well-known cultivator, after he had answered numerous questions, I drew his attention to a crown bloom only just showing, and asked him whether, if the small points or shoots surrounding it were removed, if it would not develop into what was called an exhibition bloom. Much to my surprise he seemed unwilling to make any reply. This I thought strange, as I particularly wished for his opinion. His reason, as I have suggested, was to keep what he knew to himself. But probably some cultivator will find little trouble in explaining why a bud which is not removed should be called "taking the bud."—F. C. BARKER.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 27TH.

THE Drill Hall at James Street, Westminster, was again, to the surprise of many visitors, filled with exhibits, mainly groups and plants submitted to the Floral and Orchid Committees. The display was more varied than usual, and sufficient brightness was imparted by the brilliantly coloured spikes of Gladioli, which, with Dahlias, almost exclusively occupied one table the whole length of the Hall. One group of variegated tree and shrub specimens was a welcome addition to the exhibits, as these are too seldom seen at meetings or exhibitions.

FRUIT COMMITTEE.—Present: R. D. Blackmore, Esq., in the chair, and Messrs. P. Crowley, J. Cheal, W. Bates, G. W. Cummins, J. Willard, J. Saltmarsh, G. Bunyard, G. Wythes, J. Hudson, F. J. Lane, and J. Smith.

The exhibits were few at this meeting, but the collection of fifteen dishes of Apples from A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. Cummins), were extremely fresh and good, Lord Grosvenor, Duchess of Oldenburg, and Williams' Favourite being very notable (cultural commendation). Messrs. J. Veitch & Sons, Chelsea, were awarded a bronze medal for a collection of Plums, comprising good samples of Kirke's, Golden Drop, Belgian Purple, Victoria, Frogmore, Lawson's Golden Gage, Goliath, Large Black Imperial, Washington, Denniston's Superb, Sultan, Duke of Edinburgh, and Mitchelson's. Melons are now so frequently shown, and so many have been honoured at various times, that a variety must possess some very good qualities to obtain recognition. Seedling Melons were sent at this meeting by Mr. E. B. Holmes, Maidstone; Major Egerton, Alverley Hall (gardener, Mr. H. C. Denton); Mr. J. Spong, Lindisfarne Gardens, Bournemouth; and by Mr. C. Brook, The Gardens, Red Rice, Andover. All were passed by the Committee either as insufficiently distinct, or as in unsuitable condition for adjudication. Mr. J. Church, Milford Hall Gardens, Suffolk, sent a Giant Capsicum of great size and fine colour.

FLORAL COMMITTEE.—Present: Shirley Hibberd, Esq., in the chair,

Dr. M. T. Masters, and Messrs. Druery, Herbst, W. Goldring, W. H. Williams, R. B. Lowe, W. Ingram, C. Noble, T. Baines, L. Castle, B. Wynne, H. Turner, and J. Fraser.

The extensive group of Gladioli and Dahlias from Messrs. Kelway and Son, Langport, was the most imposing feature of the meeting, and in addition to the silver-gilt medal awarded, several varieties were selected for special honours. Messrs. Keynes, Williams & Co., Salisbury, also had handsome blooms of Show and Cactus Dahlias, some of which were selected for awards of merit (silver medal). Mr. T. S. Ware, Tottenham, had a large group of hardy flowers, single Cactus, and Pompon Dahlias (silver medal). The Ferns, Crotons, and Bouvardias from Mr. H. B. May, Edmonton, secured him a silver medal, and constituted a varied and effective group. Messrs. Paul & Son, Cheshunt, contributed a group of specimens of variegated trees and shrubs, a large number of the most ornamental varieties being represented (bronze medal). Messrs. J. Carter & Co., High Holborn, had specimens in pots of their dwarf Queen Asters, a good type of the Chrysanthemum flowered group, the colours being dark and light blue, white, rose, copper red, and crimson (vote of thanks). Mr. R. Dean, Ealing, sent flowers of dwarf German Scabiouses gathered from the open ground, the colours most varied, from maroon crimson to pure white (strain commended).

Messrs. J. Veitch & Sons, Chelsea, showed a plant of the distinct *Lilium nepalense*, which has been previously certificated and figured in this Journal. A box of Rhododendrons was also contributed, and one variety was selected for a certificate. Mr. B. S. Williams, Upper Holloway, exhibited several novelties, including two white-spaced Anthuriums, *Dracena indivisa variegata*, and a fine Palm, *Carludovica palmifolia* (certificated). Mr. T. J. Dranfield, The Valentines Gardens, Ilford, had a collection of Violas; Mr. J. T. West, Cornwallis, Brentford, Cactus Dahlias; Messrs. Jackson & Son, Woking, a new Clematis named Mrs. Baron Veillard, with flowers of a mauve colour; and Mr. G. S. P. Harris, Orpington, showed some Dahlia blooms.

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair, and Messrs. H. Williams, H. M. Pollett, J. Dominy, C. Pilcher, E. Hill, J. O'Brien, and L. Castle.

The duties of this Committee were very light at this meeting, and a short time sufficed to pass judgment on the few exhibits. With regard to one of the plants shown the question arose as to whether old but scarce Orchids were admissible for certificates, and the Secretary stated they were, it being left to the discretion of the Committee to determine whether they possess sufficient horticultural merit to entitle them to recognition. Many no doubt are deterred from sending plants because they think only novelties would be recognised. Messrs. J. Veitch and Sons showed a specimen of *Phaius philippinense*, but no information was forthcoming respecting its history. The flowers are small with dull red petals, paler sepals, and a white lip with a few purple veins. The growth is slender and the leaves narrow. The Duke of Marlborough, Blenheim (gardener, Mr. Whillans), showed several varieties of *Lælia elegans*, but only one (The Duchess) was considered sufficiently distinct. H. J. Hollington, Esq., Forty Hill, had a fine variety of *Cattleya crispa*, the sepals and petals pale mauve, the lip dark crimson, and much crisped (vote of thanks). Mr. Malcom Cook, Kingston Hill (gardener, Mr. Cullimore), sent several fine varieties of *Lælia elegans*, and several other plants (bronze medal). The varieties of *Lælia elegans* are now very numerous and much prized by many of the leading Orchid amateurs, collections being formed in some cases, notably by Mr. Measures of Streatham, of all the best varieties obtainable, and the range of variations is astonishing. Mr. T. S. Ware had two curious terrestrial Orchids in his group, which ought to have been brought under the notice of the Orchid Committee—namely, *Satyrium aurantiacum* and *S. carneum roseum*; the former with yellow flowers, the latter pale pink. It is regrettable that other terrestrial Orchids are not more frequently shown and brought into notice.

CERTIFICATED PLANTS.

Watsonia rosea (T. S. Ware).—A beautiful bulbous plant with tall graceful spikes of bright rose coloured flowers and long slender Iris-like leaves.

Pteris serrulata densa (H. B. May).—A charming little Fern, very dwarf and compact, with fresh light green fronds, divided into the finest segments, quite lace-like in appearance.

Sarracenia decora (J. Veitch & Sons).—A hybrid between *S. variolaris* and *S. psittacina*, with deep red "pitchers," relieved with round white spots and green veins; bright, distinct, and good.

Carludovica palmifolia (B. S. Williams).—A handsome and useful Palm, with fine arching leaves about 2 feet long, deeply divided, the divisions 4 to 6 inches in diameter.

Lælia elegans Duchess (Duke of Marlborough).—A distinct variety, with large flowers, the sepals and petals of a soft rosy colour, the lip broad, crimson, fading to a lighter margin, the lateral lobes white and the centre yellow.

Lælia elegans, Cook's variety (Mr. M. Cook).—Flowers small compared with most other varieties, but distinguished by the rich crimson hue suffusing the sepals and petals, still deeper in the lip.

Angraecum Chaillyanum (Mr. F. G. Tautz).—This is not new to orchidists, but it is little known and deserved the recognition it received. The plant is of moderate growth, the racemes containing numerous flowers with white acute recurving narrow sepals and petals, the spur 4 or 5 inches long, and green.

Taxus adpressa variegata (Fisher, Son & Sibray).—A variety with the young shoots variegated with a golden tint.

AWARDS OF MERIT.

Satyrium carneum roseum (T. S. Ware).—Delicate pink flowers in a large fleshy spike, having broad ovate leaves at the base, some partly encircling the spike.

Gladioli (Kelway & Son).—*Duchess of Fife*, fine flowers and spikes white streaked with rich crimson, buff centre; *Vulso*, soft salmon red, white centre, large spike.

Papaver nudicaule sulphurea (T. S. Ware).—One of the Iceland Poppies, with pale sulphur yellow flowers, distinct from the other varieties.

Dahlia F. L. Temple (T. S. Ware).—One of the Paragon type, with large, well-formed blooms, velvety maroon edged with crimson.

Bouvardia Hogarth flore-pleno (H. B. May).—Like its well-known parent in colour and habit, but having large double neatly formed flowers.

Rhododendron Ophelia (J. Veitch & Son).—One of the greenhouse hybrid type, having large mauve pink flowers, the corolla lobes rounded, the truss large, and the colour distinct.

Chrysanthemum Maude Pitcher (G. Stevens).—A sport from the early flowering *Précocité*, deep bronzy yellow, quite distinct from its parent, and apparently well fixed.

Hollyhock Delicata (Webb & Brand).—A fine, deep, well-formed flower of a soft salmon tint.

Catasetum tubulare laeve (B. S. Williams).—A peculiar Orchid with greenish dotted flowers, the lip greenish, with a prominent tongue-like white centre.

Show Dahlias (Keynes, Williams & Co.).—*Reliance*, buff yellow tinged with bronze, slight crimson tip. *John Hickling*, bright clear yellow, very handsome deep bloom. *Crimson Globe*, dark crimson scarlet, neat well built bloom. *Asia*, a Cactus Dahlia with delicate blush pink blooms and white centre, a beautiful variety.

GATEACRE HORTICULTURAL SOCIETY.

THE description of the Nottingham allotment gardens was truly interesting, and tempted me to visit Gateacre, a quiet and pleasant village situated in a fertile valley six or seven miles south of Liverpool. My object was to see the results of the eighteen years' labour of the above Society. It has been established on a wider basis than most societies of a similar nature, and is doing a work that might with advantage be copied by many others. It is unfortunate perhaps that the majority of societies are content with the mere holding of one, two, or more exhibitions annually, which is the full extent of their interest and influence in promoting a love for the garden and gardening. I do not doubt for one moment that they exert a stimulating influence for good, but it is limited in comparison to the work of such a Society as that which forms the subject of these notes. The schedule of this Society provides forty-five classes, and of these seven are devoted to prizes for the neatest, best kept, and cultivated summer garden. Twenty-one prizes are offered for gardens, and in addition the President, Sir A. B. Walker, Bart., gives twelve extra prizes, value £5. The first two classes provide for gardeners and assistants, and are divided into two sections according to the ground at the disposal of the competitors. The remaining five classes are for amateurs and cottagers, and these are divided in a similar manner. These arrangements simplify the work of the judges, for it is very difficult to compare flowers and kitchen gardens by the side of flower gardens only. Some have vegetable gardens attached to their house, others have not, so that the sections are arranged according to the size and extent of the ground at the disposal of those who wish to enter the various classes. There can be no question that the Society's influence has done much to render many a small plot of garden bright and cheerful, and the friendly rivalry between neighbours is of the keenest description. It is indeed questionable if neater, better kept, or more tastefully arranged small gardens can be found in any village, the suburb of any town or city in the kingdom.

Many of these model gardens, for that applies more appropriately to them than perhaps any other term, do not exceed 25 square yards of ground, and several of them are less. These little plots are neatly laid out with Box and other edging plants, the walks in most cases the paths are gravelled, but the surroundings are such that detract materially from the beauty of these little gardens. I observed, however, that some of the cultivators were doing their best to hide the objects that destroy the effect of their small gardens. In one case I noticed a low shed hidden from the flower garden by a good row of Sweet Peas. In another garden the black palings were completely hidden by training Scarlet Runner Beans to them. They looked well, and from all appearance would prove a profitable crop.

The President and several other gentlemen in the neighbourhood are deeply interested in this Society and its work, believing that it will be the means of fostering in the minds of the young a love for horticulture, whilst the present inmates, at least, will be induced to keep their homes in the same clean, neat, and excellent conditions as they do their gardens. The inhabitants of Gateacre and neighbourhood highly appreciate the Society, as was evident by the manner in which they flocked to visit the Exhibition, which was held in "The Grange" grounds, the President's Lancashire home. The grounds and houses are thrown open to all who visit the Exhibition, and this privilege is evidently one of the great attractions of the day. The whole of the school children with their teachers attend, and tea is provided for them. No attempt will be made to describe any of the exhibits, suffice it to say the classes were well filled and the whole were very praiseworthy.

Mr. Kneale, gardener to Major Gaskell, Roseleigh Woolton, exhibited a basket of a seedling Verbena in pots named Highcliffe Scarlet. It is a strong grower, and from all appearance a very free bloomer; the truss is large, the flowers bright scarlet with a striking white eye. It is said to be a good bedder.

Mr. Glover, gardener to Sir A. B. Walker, Bart., is the Hon. Secretary of this Society, and his large and varied experience enables him to carry out the various details in an efficient and successful manner.—WM. BARDNEY.

DRYING AND CRUSHING FRUITS.

At the Show of the Royal Agricultural Society which was held at Windsor, many interesting objects were exhibited. Among these a prominent position was occupied by the machines for drying and

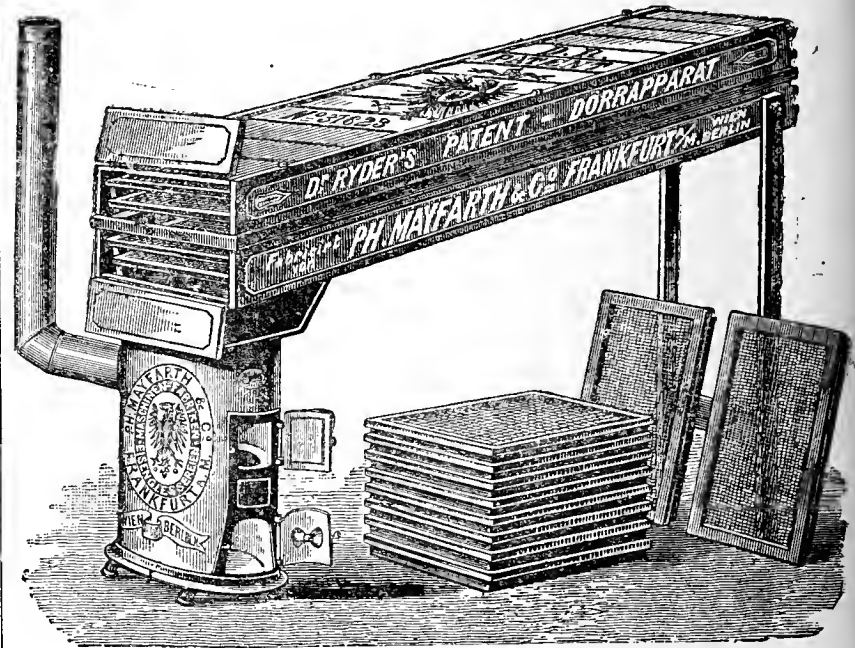


FIG. 26.

crushing fruit and vegetables manufactured and exhibited by Messrs. Ph. Mayfarth & Co. of Frankfort-on-Maine. Americans have hitherto supplied the markets of the world with dried fruits and drying appliances; they may be found in Germany, France, and other countries in which the manufacture of fruit wines and cider has been brought to a flourishing and highly remunerative point. Influenced by these considerations, science and practice have recently been called into requisition in Europe, and particularly in Germany, in order to deal with and solve the question of the improvement of fruit and vegetable products. As a consequence it was recognised that the better turning

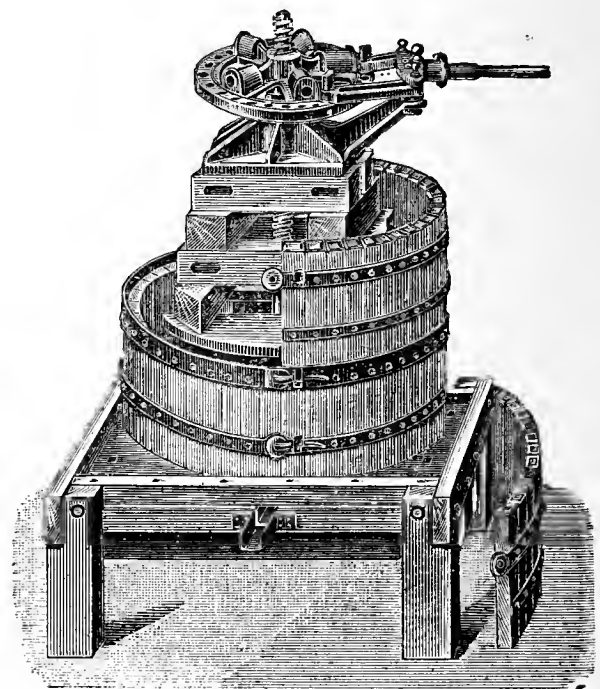


FIG. 27.

to account of fruit and vegetables was the natural and most potent incentive to increasing and promoting their cultivation. And thus it was seen that the conversion of fresh products into goods which shall be easily transportable and will keep well when dried was the essential

condition for turning them to better account. When the drying apparatus and wine press are worked together the greatest advantage is secured, fruit can be properly sorted, the finest being sold in its fresh state, the medium dried, and the remainder utilised in the production of fruit wine, and thus everything is turned to the best account. Convinced of the importance of the subject, the Royal Agricultural Society offered a good prize for the best drying apparatus. After careful experimental working extending over four days this prize was awarded to Dr. Ryder's patent, manufactured by Messrs. Ph. Mayfarth and Co. This is represented in fig. 26, and full particulars for working are given in the circulars of the firm.

For the preparation of wine, not only are Apples and Pears suitable, but also Gooseberries, Currants, Raspberries, Blackberries, Bilberries, &c. For the production of such wine in general only a press is necessary, and in addition a fruit-grinding mill when Apples and Pears are to be used. A small press is shown in fig. 27. One person suffices to work this press. He does not need to go around it, but by an ingenious ratchet motion the lever is worked from side to side, pressing out the juice completely.

NANTCOCH HOUSE,

THE residence of T. Colborne, Esq., is situated upon the north-west side of and distant about two miles from the seaport town of Newport, Monmouth. The house is a magnificent and substantial red stone building of Gothic style, and is about three miles inland of the Bristol Channel, standing upon an elevated position and commanding a beautiful view. Upon each side of the drive are fine borders of dwarf Roses and herbaceous plants, while in front of the mansion is a large and well kept lawn, with flower beds and large clumps of Rhododendrons and young specimen Conifers. The conservatory is attached to the west side, and is beautifully decorated with a good collection of flowering plants. Upon the north side of mansion is a beautiful bowling saloon some 75 feet long by 15 wide, which is beautifully adorned with flowering plants. Leading from the bowling saloon is a range of vineries, the first to be entered being the late house, which contains a good crop of Grapes of the following kinds:—Lady Downe's, Gros Colman, and Mrs. Pearson, the bunches large, berries fair, and promising to finish well. The border is outside, which permits of the inside of this house being utilised for Camellias. A fine centre border contains some eighteen or twenty trees, and upon the back wall are trained six trees, which are all well set with buds, and looking strong and healthy. In this house are also some specimens of *Adiantum cuneatum*, also tuberous Begonias, and three very creditable Peach trees grown in 18-inch pots, bearing a magnificent crop. The variety is the Maltese Peach.

The second early house is also looking well with its large black clusters of Black Hamburg, Foster's Seedling, and Mrs. Pince, the latter being very good, the bunches large, berries also, and of capital colour, and the bunches even throughout the house. A fine specimen of *Ficus elastica* is trained up the back wall. There are also some specimen plants of *Azalea indica* trained in pyramidal shape. The next house being the early vinery is planted with all Black Hamburgs, the bunches even in size, and averaging about 4 lbs. each; the colour is a dense blue black, and the individual berries measure 1 inch in diameter, the bunches firm and well shouldered. Another house contains a fine collection of Zonal Pelargoniums. Upon the back wall are grown Tomatoes. The varieties are Dedham Favourite, Hackworth Park, and Optimist, the latter doing well. In the frame ground we noticed Primulas, Cinerarias, and many other winter flowering plants.

The kitchen garden is well stocked with all kinds of vegetables. Peas being extra good, and small fruit abundant. The second fruit garden is also looking well with its fine borders of Roses all around the paths with clumps of herbaceous plants. Also noticeable in this garden is a hardy fernery well laid out, and through which runs a stream of water, and the stream is utilised for beds of the useful salad Watercress. In this garden is a large round cement tank for catching the rain water from the glass houses and outbuildings, which is connected to the tank by means of small pipes. After a day or two's rain the tank is capable of supplying the garden with water for a couple of months.

In the chief fruit garden, in which there is a magnificent Peach wall, the trees in good health making beautiful bearing wood, not too strong or too weak, but just the kind of wood one likes to see. They are swelling a fine crop of fruit. The varieties are of Peaches:—Royal George, Maltese, Bellegarde, and Early Ann. Nectarines:—Elruge and Pine Apple. Upon the walks are stood some 400 pots of Chrysanthemums of the best varieties. They are all trained upon the single stem, and are looking strong, with rich foliage down to pots, and when in bloom will no doubt be worth the special attention which has been paid to them. The Apples and Pears are up to the average, and the orchard trees are bearing fair crops.

Leaving this garden, we travel east of the mansion, finding ourselves amongst four or five lakes of water with paths leading in different directions over brooks, &c. In the ponds are some plants of *Nymphaea alba*, the white Water Lily. From this point we view the head gardener's house, which is situated about three minutes' walk from the garden, a fine red stone building in Gothic style with a garden attached. An hour's visit to Nantcoch did not permit me to give fuller details, but I was pleased to hear from my guide that Mr. Colborne is a great horticulturist, and takes every interest in his magnificent garden, and he opens to the public every year a grand Chrysanthemum show at a nominal fee, which is handed over to a charitable institution. I was informed some hundreds of persons avail themselves of the opportunity

of seeing a handsome display of Chrysanthemums, and by the appearance of the hundreds of plants now preparing the Show promises to be one worth travelling a few miles to see.—H. MITCHELL, *Frines Garden, Monmouthshire.*

HORTICULTURAL SHOWS.

SHROPSHIRE.

THE annual summer Exhibition of the Shropshire Floral and Horticultural Society, now well known as the Shrewsbury Show, was held in the Quarry Grounds of that town on August 21st and 22nd. The entries exceeded last and all previous years by upwards of 300. The quality in all departments was of an unusually high order, and from a purely gardening point of view the Exhibition was an undoubted success. Local growers were well to the fore, and evince a determination to hold their own. The weather on both days was not favourable; showers occurred frequently, and sometimes so heavy that the canvas was penetrated and some of the exhibits saturated. In the case of many shows it would have resulted in a complete failure from non-attendance; but it was far from having this effect at Shrewsbury, as upwards of 40,000 people visited the Show, and the receipts at the gates during the two days amounted to the handsome sum of £1206. This is £200 or £300 below last year, but it is still encouraging, as in 1875, when the Show was commenced, the gate-money only amounted to £394, and it has been as low as £271.

The arrangements were admirable in all departments. As in times past Messrs. Alnutt and Naunton, the Honorary Secretaries, were unremitting in their vigilance, aided by an industrious Committee.

PLANTS.

The main exhibits of these were arranged in a huge tent measuring 140 feet in length and 80 feet in width. Tall Palms and the largest specimens occupied the centre, the smaller being round the sides, and the effect when it was possible to observe it was excellent. The class for twenty stove and greenhouse plants in bloom or foliage, not less than ten in bloom, with prizes of £25, £20, and £15, brought three collections. Mr. Finch, gardener to J. Marriott, Esq., Coventry, eventually gained the first prize, and left Mr. Cypher second. The best plants in the first were some grand fresh specimens of *Dipladenia Regina*, *Ixora Williamsi*, *I. Fraseri*, *Miltonia spectabilis*, a conical mound over a yard in height; *Lapageria alba*, *Stephanotis floribunda*, *Allamanda Hendersonii*, *Croton Queen Victoria*, *C. Martii*, *Erica Thompsoni*, *E. Marnockiana*, *E. Lindleyana*, *Kentia australis*, *Cycas circinalis*, and *Latania borbonica*. Mr. Cypher's group contained more *Ericas* of a telling character. Mr. Charles Roberts, gardener to A. Nicholson, Esq., Highfield Hall, Leek, was third. The class for the nine stove and greenhouse plants was less prominent, but the specimens in the first prize group from Messrs. Pritchard & Sons, Shrewsbury, were healthy, well grown, and in fine condition, as were also those from Mr. Flock, gardener to the Marquis of Cholmondeley, Malpas, which came second, and Mr. Farrant, gardener to Mrs. Juson, Abbey Foregate, Shrewsbury, was third. Mr. C. Pearson, gardener to Lord Berwick, Attingham, was first for six stove and greenhouse plants, his *Bougainvillea glabra* and *Statice profusa* being very fine, and Mr. Farrant secured both the second and third prizes in this class with small but useful plants.

Exotic Ferns were largely shown, and Mr. Lambert, gardener to Col. Wingfield, Onslow, secured the first prize for six specimens. They were all finely grown, luxuriant, and clean, and consisted of *Hymenophyllum demissum*, *Miroclepia hirta cristata*, *Davallia Mooreana*, *Adiantum cuneatum*, *A. farleyense*, and *Neottopteris Nidus*. Mr. Cypher was second, and Mr. Roberts third, both showing well. In the Salop class for six Ferns Mr. Lambert also secured first prize, and was closely followed by Mr. Milner, gardener to Rev. J. D. Corbet, Sundorne Castle, Shrewsbury, and Mr. Farrant. The class for six plants in flower, Orchids excluded, was one of the best in the Show, and there Mr. Cypher came first with finely flowered specimens of *Statice profusa*, *Erica Marnockiana*, *E. Eweriana*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, and *Allamanda grandiflora*. Mr. Roberts was second, and Mr. Finch third. The Palms made a fine display, and the first prize for six was awarded to Mr. G. Williams, gardener to S. Baerlein, Esq., Oak Dene, Didsbury, Manchester, with well developed plants, the best of which were *Kentia australis*, *K. Fosteriana*, *K. Belmoreana*, and *Latania borbonica*. Mr. Roberts took second, and Mr. Cypher third. Mr. Lambert cleared the boards in the class for six Dracenas by taking all the prizes with capital plants. Messrs. Pritchard and Sons had first and second for six *Caladiums*, Mr. Farrant third with large plants well furnished. Mr. J. Barker, Grammar Schools, Shrewsbury, was first for four *Coleuses* with well grown pyramid plants.

Tuberous Begonias were excellent, the best coming from Mr. Davies, gardener to General Jenkins, Crockton Hall; Mr. Henry Owen, The Cedars, and Mr. Lawrence, Mayfield. Fuchsias were hardly so large as formerly, but indicated much care in culture, especially those from Mr. Phillips, gardener to the Hon. W. H. Herbert Prestfelde, Mr. Wyley, Council House, Shrewsbury, and Mr. Farrant, which won in the order named. Double and Zonal Pelargoniums were good from Messrs. Pritchard & Sons and Mr. Phillips, and inferior plants throughout the Show were remarkable for their scarcity.

The collection of miscellaneous plants arranged for effect and occupying a space 100 feet square call for special notice, as the exhibits here were more numerous than they have been for some years. Mr. Williams, Didsbury, Manchester, secured first and second prize, and

Messrs. Jones & Sons, Shrewsbury, third. The two former resembled each other a good deal in their outline but different in contents. Palms and Crotons were largely used, and with these were graceful sprays of *Humea elegans* and crimson *Celosias*. The margin was formed with little Cactuses, and the groundwork composed of Maidenhair Fern. Messrs. Jones' group was light and graceful, but lacking in distinctive features. Not for competition, Messrs. Pritchard arranged an extensive group decidedly pretty in outline. The chief prizetakers for stove and greenhouse plants, *Coleus*, *Fuchsias*, *Begonias*, *Achimenes*, *Gloxinias*, *Balsams*, &c., were Mr. Henry Owen, Dr. Burd, Mr. J. Barker, Mr. G. Burr, Mr. Edward George, Mrs. Edith Brooks, and Mrs. Wace, College Hill. The prizes for twelve table plants, a good class, were taken by Mr. Farrant and Mr. Lambert.

CUT FLOWERS.

These were extensively shown and highly attractive, but many of them would have been better had they escaped the recent rains. Roses headed the list, and the class for twenty-four varieties was well filled. Here Messrs. Perkins & Sons, Coventry, secured the first and second prizes, and Messrs. Dicksons (Limited), Chester, third. Messrs. Heath and Son, Cheltenham, were prominent in the class for eighteen blooms, securing first prize with a stand of fresh high quality flowers. Messrs. Burrell & Co., Stone Nurseries, Cambridge, were second; and Mr. James Davies, gardener to Rev. H. S. Sturges, Leominster, third. The amateurs' Rose classes were also well filled, Mr. George Townsend, Uffington; Mr. Newman, Leominster; and Mr. Williams, Shrewsbury, being the chief prizewinners. Messrs. Heath secured first prize for thirty-six Dahlias with excellent blooms. Mr. W. Shaw, Blakebrook, Kidderminster, was second; and Mr. Davies third. The same prizetakers in like order secured the awards in the class for twenty-four Dahlias. Single Dahlias were well shown, Mr. W. Shaw, Messrs. Jones, and Mr. W. Maund winning. Cut *Gladiolus* were magnificent, especially those from Messrs. Burrell, some of the spikes having as many as nineteen fully opened and perfect flowers on them, and one variety in the stand of eighteen, named Snowden, received a first-class certificate. Mr. W. Shaw also exhibited a fine stand in this class, which was awarded third prize. Asters indicated having been out in the wet, and so did the *Phloxes*, but the twelve bunches of stove or greenhouse flowers were grand; Mr. Blair, Trentham; Mr. Bremmell, Wellington; and Mr. W. Shaw taking the prizes in the order named.

Hardy herbaceous flowers were excellent from Messrs. Burrell; Messrs. Dicksons, Chester; and Messrs. Pritchard. Carnations and Picotees were attractive and well shown, the first prizes in both classes going to Mr. A. E. W. Darby, Great Ness, Shrewsbury; and the remainder to Mr. Fletcher, Priors Lee. The best Marigolds came from Mr. Abel Lowe, Honnington Wood; Mr. Fletcher, and Mr. Maund; and the best Pansies from Mr. Albert Myers, Sutton Lane Nurseries; Mr. Pattison, Shrewsbury; and Mr. Fowles, Shrewsbury. The bouquets were generally admitted to be the finest ever exhibited at Shrewsbury, and we have rarely seen them equalled elsewhere. For the ball or hand bouquet Mr. A. Heine, Birchfield, Manchester, was first with a marvellously good one, Messrs. Perkins second, Messrs. Jones third, and Mr. Blair fourth. For a bridal bouquet the three first preceding exhibitors occupied their previous position, Mr. Heine's work of art again standing well out; Messrs. Jones secured all the prizes for the stand of cut flowers; and Mr. G. Townsend both prizes in the classes for a hand and bridal bouquet in the amateurs' section. Some scores of baskets of wild flowers were exhibited, the arrangement in many cases being excellent, and the whole an attractive feature. As a matter of course the prize-winners were chiefly ladies.

FRUIT.

As usual the fruit was a great feature of the Show, and as is always the case where the prizes are good and the competition keen, much interest was displayed in the leading classes. The quality generally may be summed up as excellent, but the Grapes bore more traces of having been tarnished in transit than we are accustomed to see. There were three exhibitors of twelve dishes of fruit, and Mr. Goodacre, Elvaston Castle, Derby, secured the first prize of £10, exhibiting a most meritorious collection. In Grapes he had large well coloured Black Hamburgs, fine Muscat of Alexandria and Gros Maroc, a good Smooth Cayenne Pine Apple, Hero of Lockinge Melon, Barrington Peach, Figs, Elruge Nectarine, Moor Park Apricots, Kirk's Plum, and Morello Cherries, all in high condition. Mr. Dawes, Temple Newsam, Leeds, was a good second with fine Grapes, but unfortunately a little tarnished in travelling. The Queen Pine was excellent, and Royal George Peaches grand. The third prize was awarded to Mr. Gilman, Ingestre Hall, Stafford, whose exhibits were not so large as some of the others, but the quality was superb, the Barrington Peaches conspicuous for their excellence. In the collection of nine dishes, Mr. Milner, gardener to Rev. J. D. Corbet, Sundorne Castle, Shrewsbury, was first amongst five exhibitors. His collection included very fine Black Hamburg and Buckland Sweetwater Grapes, with Melon, Peaches, Cherries, Pears, &c., all of superior quality, and well staged. Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, was a close second, and Mr. Pearson, gardener to Lord Berwick, Attingham, third.

Grapes.—The big Grape class, in which £10, £6, and £3 are offered for six bunches of black Grapes, of three varieties, contained eight exhibitors. Mr. Goodacre secured the leading prize with Gros Maroc, large in berry and bunch and perfectly coloured; Black Hamburg, about 4 lbs. in weight and very perfect; and Madresfield Court, fine in bunch and berry. Second Mr. Stevenson, gardener to Col. Pilkington, Prescott, with Black Hamburg, Black Alicante, and Madresfield Court,

all very good, but the latter not quite so well finished as the others. Mr. Dawes came third with smaller but well coloured and shapely bunches.

In the class for three bunches of Black Hamburg Grapes Mr. W. Bottomley, gardener to Miss Evans, Hurst House, Prescott, very justly took leading honours with fine specimens, extra good in berry and colour; Mr. Stevenson coming second; and Mr. Bremmell, Wellington, third with bunches of unusual size. Seven competitors staged in the class for any other black Grape, and Mr. Middleton, gardener to H. Pilkington, Esq., was placed first with three grand bunches of Madresfield Court. Mr. J. Barker, gardener to J. T. Raynes Esq., Rock Ferry, second; and Mr. Stevenson third. In the class for four bunches of white Grapes the exhibits were of a very superior order; Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood, Notts, being first with two grandly grown bunches of Muscat of Alexandria and Foster's Seedling. Mr. Middleton came second, and Mr. Goodacre third with specimens but little inferior to the first. The class for three bunches of Muscats contained some excellent exhibits of this fine Grape; Mr. J. T. Harris, The Hayes, Stone, being first; Lord Tollemache, Tarporey, second; and Mr. C. Lee, Campbell, Ross, third. Eleven lots were staged in the class for three bunches of any other white Grape. Mr. W. Bottomley, Prescott, was placed first with three faultless bunches of Buckland Sweetwater; Mr. George Meakin, Cresswell Hall, Stafford, and Mr. Middleton following with Foster's Seedling in fine form. The Grape classes confined to the county of Salop were well filled, and the exhibits were highly creditable to local growers. In the class for four bunches in two varieties of black Grapes Mr. S. Bremmell, Wellington, was first; Mr. Lambert second; and Mr. Milner third; Black Hamburg and Madresfield Court being remarkably good on each stand. In the corresponding class for three bunches of white Grapes Mr. Milner came first, Mr. Bremmell second; and Mr. Pearson, gardener to Lord Berwick, third. The amateur Grape classes showed a decided improvement, and the exhibits here from Mr. W. Adams, Mr. Barker, and Mr. G. Burr did them much credit.

The Peach class is always well filled at Shrewsbury, and this year it was, if anything, better than ever. The six splendid fruit of Royal George, shown by Mr. Gilman, which secured the first prize, were unusually fine; and the Barringtons from Mr. J. G. Morris, Allerton Priory, Liverpool, and Mr. Goodacre, that gained the second and third prizes, were close up to the first. Nectarines were also of fine size and highly coloured, Mr. R. Lawley, gardener to Mrs. Darby, Adcote, taking first and second, and Mr. Meakin third. In Apricots Mr. Pearson, Mr. C. Flock, and Mr. Owen, Combermere Abbey, were the successful exhibitors. The Plum classes were excellent, and as usual Mr. Blair, gardener to the Duke of Sutherland, Trentham, was first in both classes; Mr. Lockie, gardener to G. O. Fitzgerald, Esq., Oakley Court, Windsor, following in both; Mr. Pye, Eline Hall, and Mr. Thomas Brown, The Column, Shrewsbury, being third in the different classes.

The Melons in each class numbered over two dozen, and some very handsome fruits were staged. Some were unnamed, an omission, and the prizes in the green-fleshed class were secured by Mr. J. Cravin, Mr. C. Flock, and Mr. J. Bennett, The Rug, Corwen. In the scarlet-fleshed class, Mr. Owen, Mr. Bennett, and Mr. J. Bates were the prizewinners. Considering the season the Morello Cherries were good, and so were the collections of six dishes of hardy fruits, Mr. Owen being first with samples of Apples, Pears, Cherries, Currants, Red and Black, and Gooseberries; Mr. Pearson second, and Mr. Lambert third. Mr. Adnitt, one of the respected Hon. Secretaries, evinces the liveliest interest in the arranging and success of the fruit classes, and he is to be congratulated on accomplishing the work admirably. We might further remark that Pine Apples are not included in the prize list, and this is an omission that should not exist at such an important and high-class fruit show as is now annually secured at Shrewsbury.

VEGETABLES.

These increase in numbers annually, and the general high quality was much remarked on at this Show. The collections were specially numerous, and made a very grand display. The leading collection was that for twelve varieties, and Mr. Lambert secured the first prize of £5 with a dozen dishes, even in quality and high in cultural points. They consisted of Mammoth Kidney Bean, Matchless Carrot, Lyon Leek, Globe Artichokes, Banbury Onion, Telegraph Cucumber, Duke of Albany Pea, Perfection Tomato, Clarke's Red Celery, Snowball Turnip, and Sutton's Seedling Potato. Mr. Milner came second, uniform good quality being conspicuous in his dishes. Mr. Wilkins, gardener to Lady Theodore Guest, Enwood, Henstridge, Blandford, was third, his dish of Ailsa Craig Onion being unique. In consideration of eleven collections being in competition, the Committee gave two additional prizes, and these were secured by Mr. Wait, gardener to the Hon. W. P. Talbot, Glenhurst, and Mr. A. J. Skinner, Cheltenham. In the collection of six kinds of vegetables confined to the county of Salop, Mr. Lambert came first, Mr. Milner second, and Mr. H. J. Corfield, Seaton Knolls, third, each staging excellent produce. Mr. Lambert was first for six sorts of Potatoes, with Miss Fowler, Chiswick Favourite, The Dean, Reading Russet, Prime Minister, and Abundance. These were not so large as some, but clean and uniform throughout. Mr. Milner came second, and Mr. W. Palmer, Thames Ditton, third. Mr. Abel Lowe won first for three dishes of Potatoes, Mr. Milner second, and Mr. Lambert third. The Colonel from Mr. Milner was first in the single dish class, Mr. Lambert being second and Mr. Corfield third.

Of Tomatoes many fine dishes were staged, Mr. Arkell, Cheltenham, securing first prize with fine, big, round, smooth fruits of Webb's

Sensation; Mr. E. Osborne, Chester, being second with Sutton's Perfection, and Mr. Waite third. Some of the Peas were too old, but many were in good condition, and Mr. Owen was first. In Spring Onions Mr. Lockie was first with Improved Reading, and he also secured the first place for those sown last autumn. In Cucumbers too Mr. Lockie far out-distanced all competition with a brace of his New Perfection, which were models. The first-prize Cauliflowers from Mr. Corfield were of medium size, white, and good in quality, as were also those from Mr. Lambert that were second, and indicated that exhibitors can do little in prizetaking with badly coloured loose specimens, however large they may be. Some of the Celery cut up badly, but the prize heads were clean and sound, the first from Mr. Bremmell being named "White Gem," but it was much too large to be that useful little variety. Mr. Wilkins came second, and Mr. Farrant third. Kidney Beans were numerous, Mr. J. F. Lowe, The Mount, Shrewsbury, being first with clean young specimens, and the Parsnip, Carrot, and Turnip classes were well filled. It was here, as in the fruit department, that practical growers crowded and discussed the many points bearing on old and new varieties, and we were glad to find this section so admirably filled.

SPECIAL PRIZES.

These were offered by Messrs. Sutton & Sons, Reading, and Messrs. Webb & Sons, Wordsley, Stourbridge. In the class for one specimen of Sutton's Empress, Imperial Green, Scarlet Invincible or Hero of Lockinge Melon, twenty-two fruits were staged, Mr. Wright, Ross, being first with Imperial Green; Mr. Craven second with Scarlet Invincible; and Mr. C. Flock third. For two Cucumbers, to consist of Sutton's Improved Telegraph or Purley Park Hero, Mr. Lockie was a good first with the latter, Mr. J. J. Morris second, and Mr. Arkell third. Splendid dishes were staged in competition for nine fruits of Sutton's Perfection Tomato, Mr. Waite being first with a grand sample, Mr. Arkell second, and Mr. Osborne third, but the largest fruit was passed as being too ripe. For six of Sutton's Early Gem Carrot some excellent short thick roots were staged, Mr. Abel Lowe being first, Mr. Davies, Leominster, second, and Mr. Wilkins third with the largest roots, but disposed to be coarse. There was also a large competition for Messrs. Sutton's Peas, and the competition these special prizes created was most encouraging. In coming to Messrs. Webb's specials, the first of £5 offered for eight kinds of vegetables, brought out fourteen collections that made a telling display, and here again Mr. Lambert was to the fore with his clean, even, well grown produce. His dishes consisted of Stourbridge Marrow Pea, Globe Artichoke, Lion Leek, Giant Cauliflower, Runner Bean, Stourbridge Glory Potato, and Parsnips. Mr. Wilkins was a close second, his Ailsa Craig Onions being again conspicuous, as were his Sensation Tomato and White Celery. Mr. Corfield was third, Mr. Lockie fourth, and Mr. Milner fifth.

The cottagers had a tent 140 feet in length and 40 feet wide devoted to them, but this, although sufficient for all in former years, was totally inadequate this year, and many of their exhibits had to be put in another tent, and some on the grass in the open. As indicating the extent of the classes, there were 113 dishes Onions, 53 dishes of Carrots, 47 trios of Cabbage, 59 pairs of Vegetable Marrows, 46 half-dozen of Parsnips, 76 dishes of Peas, and 67 dishes of Potatoes staged. Other classes were equally well filled, and the quality generally was of a very creditable character.

MISCELLANEOUS.

Local and distant nurserymen were large exhibitors of their general produce and specialties, and as in other sections the Show is annually extended in this direction. Mr. E. Murrell, Shrewsbury, exhibited a fine group of ornamental foliage trees and fruit trees in the open, and beautiful stands of Roses, Gladiolus, Dahlias, Begonias, &c.; Mr. Davies, Begonia Nurseries, Yeovil, Somerset, a magnificent lot of blooms of this popular flower; Messrs. Cheal & Sons, Crawley, stands of cut single and double Dahlias, remarkably well coloured. Messrs. Jones & Sons, Shrewsbury, had an extensive display of Ferns, &c.; Messrs. Laing and Mather, nurserymen, Kelso, N.B., many handsome spikes of Hollyhocks in full bloom, and in such vigour as is rarely seen nowadays, and upwards of a dozen large boxes of Carnations and Picotees. Messrs. Dicksons, Limited, Chester, filled a long table with a healthy group of stove and greenhouse plants, cut Roses, Gladiolus, and a sample of their new wood shavings for fruit packing. Messrs. Pritchard & Sons had very extensive collections of useful plants; Messrs. W. & J. Birkenhead, Sale, Manchester, a large group of various kinds of Ferns; and the Liverpool Horticultural Company (John Cowan, Limited), an exceedingly attractive collection of some hundreds of young Tea Roses in 6-inch pots in full and profuse bloom, and various samples of floral decorations; Mr. A. Myers, Shrewsbury, was also an extensive exhibitor of nursery plants; and Messrs. Webb & Sons, Wordsley, Stourbridge, had a large and effective stand, containing good samples of their new and popular vegetables and flowers.

THE WILTS HORTICULTURAL SOCIETY.—AUGUST 22ND.

THIS Society held its annual Show of plants, fruits, flowers, and vegetables in the Bishop's Palace Grounds, Salisbury, on the above date, and on the whole it may be considered up to the standard of any of the many excellent shows previously held by the Society. The weather was very ominous in the morning, but it improved as the day advanced. The takings at the gates, however, were £23 less than last year. The principal exhibitors of plants were Messrs. Cypher, Lock, and Wills, the renowned Cheltenham, Crediton, and Southampton growers; Messrs. Ward, Inglesfield, Evans, Warden, and P. Davidson being the chief exhibitors in the fruit classes.

The Committee, and its energetic and very courteous Hon. Secretary (Mr. W. H. Williams), together with the exhibitors, may all be congratulated upon the arrangements of the Show, and the quantity and quality of the exhibits.

Plants (open classes).—Fifteen pounds, ten pounds, and five pounds were offered for twelve stove and greenhouse plants, distinct, six foliage, and six flowering; and, as on previous occasions, the exhibits staged in competition for these prizes formed the chief feature of the Show. The contest between Mr. James Cypher and Mr. George Lock was a keen one, but chief honours were accorded to the Cheltenham collection. This consisted of large and densely flowered plants of Bougainvillea glabra, Ericas Austiniana and Marnockiana, Clerodendron Balfourianum, Ixora Frazeri, and Phcenocoma prolifera Barnesi, and large and well-coloured Crotons Queen Victoria and Sunset, the latter being an especially bright foliaged plant, the other plants being Cordyline indivisa, Dasylirion acrotrichum, Latania borbonica, and Cycas circinalis, all being in fine condition. The best plants in Mr. Lock's excellent collection were Croton Williamsi, C. Warreni, and C. Chelsoni, Ixora Duffi, Latania borbonica, and Cycas circinalis. Mr. E. Wills, gardener to Mrs. Pearce, Southampton, was a creditable third. In the class for nine stove and greenhouse plants, four in bloom and five in foliage, Mr. Lock was placed first with good fresh plants, showing a richly coloured Croton Disraeli, Kentia Fosteriana, Thrinax elegans, Erica Marnockiana, Dipladenia Brearleyana, Allamanda Hendersoni, Clerodendron Balfourianum, and Dasylirion acrotrichum. Mr. Wills was a very good second; Mr. Curry, gardener to Colonel Pepper, Milford Hill, Salisbury, was third. Mr. Wills was also first for six exotic Ferns with large fresh examples of Microlepia hirta cristata, Adiantum Cardiochleana, Davallia Mooreana, Nephrolepis davallioides furcans, Cibotium spectabile, and Phlebodium glaucum. Mr. Fred. Smith, gardener to the Lord Bishop of Salisbury, was a good second, and Mr. Curry was third. Mr. Thornton, gardener to Mr. Greenwood, Harnham Cliff, Salisbury, had the best six plants of Tuberos-rooted Begonias with remarkably fresh and well-flowered plants; Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, being a close second. Mr. E. L. Brown, Portland Place, Fisherton, Salisbury, had the best six Fuchsias.

Groups.—Groups of plants arranged for effect in a semicircle 12 feet in diameter have, during the last two or three years, become one of the leading features in this Society's Shows. Out of several good arrangements Mr. George Lock was awarded premier position, his group being so light, graceful, and well finished as to leave little to be desired. The centre was formed with a light feathery Palm, with long trailing shoots of Dipladenia Brearleyana, showing to advantage their beautifully coloured flowers among the Palm leaves, the effect being greatly enhanced by several well flowered plants of Liliun auratum underneath. The groundwork consisted chiefly of Maidenhair Fern dotted at irregular intervals with Oncidiums, Crotons, Liliuns, Palms, Ixoras, Francoa ramosa, Pandanus Veitchi, Phyllanthus nivosus albus, &c., the whole being fringed with small plants of Panicum variegatum, Isoplepis gracilis, &c. Mr. Wills was a good second, his "dot" plants being a little too close, but the general effect was excellent. Mr. Curry was third. The first prize in this class was given by the President of the Society, the Earl of Radnor. Mr. Lock was again first with a similar group to that described in the class confined to gentlemen's gardeners. The competition in this class was not so keen as in former years, but the arrangements were quite as good, if not better, Mr. Wills being, as in the open class, a capital second. The first prize of £5 in this class was given by Messrs. Keynes, Williams & Co., Salisbury. In the class for groups (open to amateurs residing within a radius of six miles of Salisbury) arranged for effect, in semicircle of 10 feet, Dr. F. W. Coates, Salisbury, was a good first, winning the cup, value £5, given by the Mayor of Salisbury (Mr. S. Parker). Several specimens of Orchids were used with effect in this well finished group. Mr. E. L. Brown was a creditable second, and Mr. Lovibond a fairly good third. In the next class, in which exhibitors in the three previous classes were not allowed to compete, Mr. F. E. Pearce, High Street, Salisbury, was a good first; Mr. Hinxham, gardener to H. G. Gregory, Esq., Salisbury, was second, and Mr. Thornton was third. Messrs. E. L. Brown, J. W. Lovibond, C. W. Gater, J. E. Nightingale, A. Mapple, and Thornton were the winners of several prizes in other plant, fruit, flower, and vegetable classes.

Fruit.—On the whole fruit was shown well; the class for Muscat Grapes was the best we have seen at provincial shows for some time. Five good collections of eight varieties were staged, Mr. H. W. Ward being a good first, staging Muscat of Alexandria and Madresfield Court Grapes, Longford Gem Melon (the result of a cross between Hero of Lockinge and Blenheim Orange), Sea Eagle Peach, Pine Apple Nectarine, Cayenne Pine Apple, Brunswick Figs, and Moor Park Apricot—a good all-round lot. Mr. Evans, gardener to Lady Ashburton, Melchet Court, Romsey, was second, his best dishes were very fine Barrington Peaches and Brunswick Figs. Mr. Inglesfield, gardener to Sir John W. Kelk, Bart., Tedworth, Marlborough, was a very good third, his collection including fine bunches of Muscat of Alexandria and Black Hamburg Grapes, and excellent Walburton Admirable Peaches. Mr. G. Lock was first for a good Cayenne Pine, Mr. Ward being second with the same variety, and Mr. Miller, gardener to W. H. Long, Esq., M.P., Roode Ashton, Trowbridge, was third with a Queen. Only three fruits were staged. Grapes.—Seven good stands of three bunches each of Muscat of Alexandria were staged, the bunches being large and shapely, and fairly well coloured. The prizes were awarded to the smaller and better coloured bunches, staged respectively by Mr. Thomas Northeast, gardener to Mrs. Torrence, Norton Bavant, Warminster (an

old pupil of Mr. H. W. Ward's); Mr. Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury; and Mr. P. Davidson, gardener to Lord Wolverton, Iwerne Minster, Dorset. The three bunches on one stand, which was not placed, weighed nearly 12 lbs. Five stands of Black Hamburgs were put up. Mr. G. A. Inglefield was first with compact well-finished bunches, consisting of large sloe-back berries; Mr. P. Davidson being a good second. Mr. James Chalk, gardener to G. Road, Esq., Westwood, Salisbury. Mr. H. W. Ward was first for three bunches of any other white than Muscat of Alexandria, with bright clean examples of Buckland Sweetwater; Mr. Warden being a very close second with the same variety; the third prize going to Mr. Thomas Wilkins, gardener to Lady Theodora Guest, Inwood House, Henstridge, Dorset, with rather green Foster's Seedling. In the any other black than Hamburg class Mr. P. Davidson was awarded first prize for three handsome bunches of Black Alicante, carrying a fine bloom; Mr. Warden being only accorded second position for three average-sized creditably coloured bunches of Madresfield Court; Mr. Chalk taking third prize with Gros Maroc, not very well coloured for that variety. Mr. Ward had the best flavoured Melon in Hero of Lockinge, and Mr. Inglefield the second best in a good fruit of Golden Perfection. Mr. Inglefield had the best dish of Peaches, showing large uniform fruits of Walburton Admirable, Mr. Wilkins being second with smaller but highly coloured fruits of Sea Eagle. Mr. Ward scored a victory with Nectarines with large highly coloured fruits of Pine Apple, Mr. Inglefield following closely with the same excellent variety. Mr. Browning, gardener to Sir Talbot Baker, Bart., Ransome, Blandford, was first for six large clean, bright fruits of Moor Park Apricot; Mr. Hains, gardener to the Hon. Duncombe Pleydell-Bouverie, Coleshill House, Highworth, was second; and Mr. Ward was third with the same variety. Out of nine dishes of Plums staged Mr. Ward was easily first with large well-ripened fruits of Guthrie's Gage; Mr. Smith was second, and Mr. Browning third with fruits of the old Green Gage. Mr. Smith was first for six dishes of Apples, three dessert and three culinary varieties, showing clean, even fruits of Irish Peach, Worcester Pearmain, Duchess of Oldenburgh, Ecklinville Seedling, Lord Suffield, and Warner's King. Mr. Browning was second, showing, in addition to three of the varieties just mentioned, good fruits of Cellini, Kentish Fillbasket, and Devonshire Quarrenden. Mr. Thornton was third. For four dishes of Pears, distinct, the prizes went to Messrs. Browning and Warden in that order. The best dishes in the first prize collection were Williams' Bon Chrétien, Louise Bonne of Jersey, and Beurré Diel. Mr. E. L. Brown showed (in the amateurs' classes) two dishes of remarkably large, even, handsome, and well-coloured Barrington Peaches, which attracted a good deal of attention from visitors. Mr. H. W. Ward showed, not for competition, two stands of Golden Queen and Gros Maroc Grapes in good condition, and two large well-netted Melons, Longford Gem. Golden Queen is a fine looking Grape.

Vegetables.—There was only one class provided in the Society's schedule for vegetables for gentlemen's gardeners—namely, for a collection of twelve kinds, and rarely have we had the pleasure of seeing four such collections. Mr. J. W. Thomas Wilkins was awarded first prize for fine examples of the following:—Carters' Autumn Giant Cauliflower, Suttons' Perfection Tomatoes (large, smooth, round, even, and highly coloured fruit), Carters' New Intermediate Carrots, Rousham Park Onions, Carters' Jubilee Runner Beans, large specimens of Carters' Holborn Model Leek, Globe Artichokes, and Tender-and-True Cucumbers, the whole being most tastefully set up in a groundwork of beautifully curled Parsley. Mr. Haines was a close second, his collection containing remarkably good specimens of Carrots, Tomatoes, and Onions; Mr. Inglefield's excellent collection taking third prize. This contained wonderfully fine specimens of Potatoes, Turnips, and Onions. The fourth collection was staged by Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, Berks, who was most deservedly awarded an extra prize.

Cut Flowers.—Several good stands of these were shown. The prizes offered for eighteen and twelve trusses, distinct varieties, brought out good competition. Dahlias were also well shown, but Roses were not particularly good. For twenty-four Roses, distinct, Mr. Flight, Winchester, was a good first, Madame Lambert, Marie Van Houtte, A. K. Williams, and Duke of Connaught being his best blooms. Dr. D. Seaton, Bitterne, Hants, was second, and Mr. Warden a good third. Mr. W. H. Fowler, Claremont, Taunton (a gentleman who is likely to be heard of in the future Rose and Chrysanthemum shows) was a good first with twelve blooms, the latter being solid, even, and fresh. Mr. R. West, Northlands, Salisbury, was second, and Mr. Smith was third. In the Dahlia classes Mr. Flight, Mr. Browning, and Mr. Haskins (Salisbury) were the most successful. For eighteen bunches of cut flowers Mr. Lock secured premier position, Mr. J. Evans was second, and Mr. W. Peel gardener to Miss Todd, Shirley, Southampton, was third, the first and second named exhibitors showing choice flowers in their respective stands. For twelve bunches the prizes went to Messrs. Browning, G. A. Inglefield, and J. Wilkins, in that order. In the class for eighteen Carnations or Picotees, not less than nine varieties, Mr. W. H. Fowler scored another victory, showing bright, fresh, and in some instances large blooms. Mr. E. L. Brown and Mr. H. J. Gibbs, Salisbury, were second and third respectively. In the ladies' classes Miss Mattie Brown, Miss Flight, and Miss Prewett, Miss Lovibond, Miss Hickley (Taunton), and Miss Catherine Brown were the most successful with dressed stands, buttonholes, shoulder sprays, &c.

Miscellaneous Exhibits.—Several imposing stands of Roses and Dahlias—covering the staging on one side of one of the three large tents

devoted to the exhibits—were staged, not for competition, by Messrs. Keynes, Williams & Co., who also arranged a magnificent bank of Palms, Gladiolus, and Dahlias. Numerous exhibits were contributed by Messrs. Robert Veitch & Son of Exeter, of Japanese Maples, &c. The Carnations, Gladiolus, and Shirley Poppies included in the Exeter contribution were also greatly admired, as also were the fine stands of herbaceous flowers staged by Mr. B. Ladham, Shirley Nursery, Southampton, in such a manner as to fully demonstrate their adaptability and utility for house decoration.



FRUIT FORCING.

PINES.—*Suckers from Summer-fruiting Plants.*—These will soon be ready to be repotted. It is well to divide the plants into two lots; the strongest plants should be shifted into their larger pots as soon as ready, employing 10 or 11-inch pots according to kind, affording them a position near the glass in a light airy house, keeping them gradually growing through the winter. The plants so treated will be readily excited into fruit next May or June, and will afford a good supply of ripe fruit in late summer or early autumn. The other plants, suckers from the summer fruiters, not large enough to shift into full-sized pots, winter in the 7 or 8-inch pots, transferring them to the fruiting pots as soon as ready in the spring, which with suckers of Smooth-leaved Cayenne that were started last March, will provide a successional supply of fruit during the winter months.

Rearranging Plants.—This should be done in order to separate the fruiting from the non-fruiting plants, as many of those that were started from suckers of last summer fruiters will have fruit swelling off. Those plants not fruiting will have completed the growth, and should have air liberally for the next six weeks when the temperature exceeds 80°, maintaining the bottom heat steadily at 80°, and all plants well established—i.e., well rooted, should have a bottom heat of 80° to 85°, but recently potted plants, or those not having roots well established in the fresh compost, maintain at 90°.

Plants Swelling their Fruit.—Moderate atmospheric moisture is required for these, admitting a little air at the top of the house early in the morning, so as to allow of any superfluous moisture escaping before the sun's rays act powerfully upon the fruit. Any fruit it is desired to retard should be moved to a rather cool and airy, also somewhat shady house.

FIGS.—*Overluxuriant Trees.*—Planted-out trees in Fig houses not unfrequently grow rampantly, and consequently produce thin crops of fruit. In that case root-pruning may be resorted to and the roots be confined to a border from 3 to 4 feet in width. If the drainage be defective it will be necessary to lift the trees in the autumn as soon as the leaves commence falling and replant in fresh soil. Place in 9 or 12 inches of rough stones or bricks for drainage, and over them a covering of rather rough lime rubbish, using the finer parts for mixing with the compost in the proportion of a sixth to the bulk of turfy loam, and a twentieth of crushed bones. In replanting ram the soil well about the roots, for short-jointed fruitful wood cannot be so well secured by other means than by a solidified compost. The border should be 24 to 30 inches deep. Should the drainage be good it will only be necessary to confine the roots to the narrow border, removing some of the old soil from amongst them and top-dressing with fresh loam with an admixture of lime rubbish and crushed bones as above stated. If the loam be light add a sixth of clayey marl in as finely divided parts as possible; if heavy, a sixth of road scrapings. The proper time to operate in the manner indicated is as soon in late summer or autumn as the foliage gives indications of maturing.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—The leaves will soon be off, then loosen the trees from the trellis, clean the house, seeing to the needful repairs, and painting of the woodwork and trellis. The mulching and loose surface soil should be removed and fresh loam, with a twentieth part of bone dust and a similar quantity of wood ashes added, affording a moderate watering if the soil be dry. Whatever pruning is required should be done as soon as the house is in order, but if the trees have been properly attended to little work will be required to be performed with the knife. Dress the trees with an insecticide. It is well to wash the whole of the trees by means of a brush with a soapy solution—say 4 ozs. softsoap to a gallon of water, adding a quart of strained tobacco juice, and if there be any scale a wineglassful of spirits of turpentine may be added, keeping it well mixed by frequent stirring. In applying insecticides care should be taken to reach every part, and the brush should be used in such a manner as not to injure the buds. Trees cleaned and neatly secured to the trellis look far better than those left untrimmed until the latest period before starting.

Late Houses.—The fruit is swelling well and requires very liberal supplies of water until the ripening is well advanced, when moderate supplies will be sufficient; enough, however, should be given to maintain the foliage in a healthy state. Trees that are making gross wood, and have a tendency to late growth, should be marked for lifting, an

infallible remedy for indifferent setting and uncertainty of stoning. Any trees that do not ripen the wood well must be reduced at the roots by forming a trench, so as to detach the roots at about one-third the distance from the stem the trees cover on the trellis, doing it about the end of September or as early in October as the fruit is gathered.

THE FLOWER GARDEN.

Propagating Zonal Pelargoniums.—Zonal Pelargoniums have in most instances grown only too well, and have not flowered so freely accordingly. There is no lack, therefore, of cuttings, but owing to the sappy nature of these, more than ordinary pains must be taken in their propagation. The sooner the cuttings are taken the better is the prospect of a good strike being effected. No plants are more easily raised from cuttings, but unfortunately their preservation during the winter is not such a very simple matter even with the aid of modern well constructed properly heated structures. The intelligent grower, therefore, not only studies how best to root abundance of cuttings, but is most concerned as to the best methods of storing them through the winter. In any case so sappy are the cuttings that it is advisable to resort to the old method of spreading them, after they are duly trimmed, in the sunshine for a few hours in order to get rid of superfluous sap, and to dry the wounds. Nor after the cuttings are once inserted in boxes, pans, or pots should they be exposed to all weathers, a saturated soil proving fatal to innumerable sappy shoots. All should be placed in a sunny position under glass and given plenty of air, but no water more than is necessary to prevent their shrivelling badly. At no time during the autumn and winter months ought they to have more than sufficient to just keep them alive and plump, late formed growth being less hardy and more liable to damp off wholesale.

Pots versus Boxes.—Where extra large numbers of Zonal Pelargoniums are annually bedded out there is the greatest need for striking and storing them rather thickly in shallow well drained boxes, but in most instances it will be found that a much greater percentage of young plants can be preserved during the winter in comparatively small pots. When once a mass of soil in a box becomes very wet it does not become dry again for a long time, and this is the most frequent cause of numerous failures. When, however, the cuttings are inserted rather thickly in small pots, or say as many as six in a 4-inch pot, these rarely get too much water, and all usually turn out strong in the spring. The least that can be done in that direction is to give all the delicate bronze, golden, and tricolor varieties the benefit of small pots, and other conditions being favourable, very few indeed will be lost. Small pots or any size up to 6-inch pots, in every case well drained, may be filled with light sandy soil, and after the cuttings are firmly inserted in them place them on suspended shelves in Peach houses, and the high back shelves as well as the front staging in vineries, where they are to remain all the winter.

Planting Choice Narcissi and Daffodils.—In many instances those who ordered bulbs of these early, or while yet many were in flower, have already received the dry bulbs, and the inexperienced, especially, are at a loss to know what is best to be done with them. As a rule, the sooner the bulbs are planted the better, and they pay for any little extra trouble taken with them. They ought to be planted where they need not be disturbed for several years, or till such time as they are too thick and require to be lifted and divided. For several reasons they should be planted in clumps of three or more bulbs, and if the natural soil is very poor, a little sandy loamy compost may be substituted with advantage. All ought to be planted fully 6 inches deep, and be duly labelled. It will be found that Daffodils especially succeed admirably among trees, a little shade benefiting them rather than otherwise; the herbaceous border, however, being a good locality for the choicer varieties of both Narcissi and Daffodils. The very popular Narcissus poeticus, or Pheasant's Eye, does not move well in a dry state, but if lifted, divided, and replanted soon after they have commenced to root freely, all sufficiently strong will flower in due course, and also increase in size considerably.

Snowdrops.—These again are much best left alone where they are well established, but if dry bulbs are obtained these should be planted either in patches or drills at once, and about 2 inches below the surface. Old clumps may safely be lifted and partially divided directly the points of the leaves are seen through the soil, this having no ill effect on their flowering.

Lilium candidum.—It is not advisable to often disturb these, but if necessary, the clumps may be lifted, divided, and replanted now. During the past season disease has played great havoc among the stock of plants in numerous gardens, and for this there is no remedy—all alike, and under various conditions, suffering from it. A good depth of fresh loamy soil best suits it, the bulbs being placed just below the surface and good care taken of the leafy top growth. It is wonderfully effective in clumps at the back of an herbaceous border, and is very serviceable in a cut state.

PLANT HOUSES.

Azaleas.—These plants are trained as pyramids and into other shapes in the majority of gardens. Although we do not admire closely trained formal specimens, it is necessary to keep them in good condition where they exist. Tying and training are often work for the winter months, but it is a mistake to defer this operation till so late in the season. When the shoots are tied in at that period of the year the plants very rarely display their flowers to the best advantage. After the buds are set tying should be pushed forward from time to time and

completed as early as possible. This allows of the shoots turning outwards again to the light, and thus show their flowers to advantage. The plants in addition are neater over a much longer period, in fact the majority of the ties are concealed by the foliage. Before they are tied in closely, however, carefully inspect the plants, and if any trace of thrips can be found wash them thoroughly in a solution of tobacco water in which about half an ounce of softsoap has been dissolved to each gallon of the mixture. A piece of common washing soda the size of a cob nut may also be dissolved in the same quantity. Assist later plants to complete and ripen their wood as quickly as possible, and all shade should be discontinued after the flower buds are set. Keep the plants liberally supplied with water, use the syringe twice daily when fine, and give abundance of air. Where plants have been stood outside prepare for housing them.

Greenhouse Rhododendrons.—Do not stand these outside after the completion of their growth, for if they become saturated by heavy rains more harm than good is done. When plants have completed their growth do not syringe them, and maintain a slightly drier atmosphere until it is certain that the flower buds have commenced swelling. The syringe may then be used freely to keep down thrips, the greatest enemy to these plants. This insect is readily detected, for it rarely attacks the under side of the foliage. The smaller growing forms are more subject to it than those that make strong leathery leaves. Be careful not to allow these plants to become dry at their roots, and, on the other hand, do not overwater them. Admit abundance of light to harden and ripen their wood, and keep the plants standing on a moisture-holding base.

Lapagerias.—Thrips generally appear at this stage of the plant's growth—that is, when growth is completed and the flowers are showing. If the plants are not thoroughly cleaned now very little can be done as the flowers commence opening without injury to them, especially in the case of the white form. Syringe the plants for the eradication of thrips with tobacco water.

Abutilons.—Strong plants in 5 and 6-inch pots may be placed into others 2 and 3 inches larger. The white form is very useful for wreaths with the yellow nipped out. Plants potted now and grown from the middle of September in a temperature of 60° will continue to grow and yield flowers throughout the winter. It is important to give the plants moderate root room when required for this purpose. They do well in loam, one-seventh of manure, and a little sand.

Tuberose.—Tubers that were potted late and have since been grown under cool airy treatment will be showing their flower stems. These may be introduced, according to requirements, to some structure that can be kept moderately close to bring them into flower. The flowers are useful from the end of September for a variety of purposes, and a succession with care can be maintained for a long time by the introduction of a few plants at intervals of a fortnight. Give weak stimulants directly the flower stems are visible.

THE BEE-KEEPER

EXPERIENCES AT THE HEATHER.

As I previously reported the quantity of honey gathered between the 24th July and 1st August, I need say no more about that than it necessitated me being in constant attendance. I went to the moors on the 9th of August, where I am still, and likely to be till the end of the month, owing to the bees persistently swarming.

THE FIRST SWARM.

This issued a few minutes after my arrival, and while I was preparing to leave them, and would have been lost had I not delayed a little to write a letter upon the door of a passing cart, which the driver undertook to post, when the issuing swarm annoyed the horse. That betrayed their actions and caused me to cut short, so that the animal could get out of the way, as it was with deep regret I read the account of persons in charge of bees being stung and a valuable horse stung to death through carelessness.

WHO IS TO BLAME?

I have repeatedly warned bee-keepers against sending bees to the moors by cart or rail imperfectly secured. I have also shown how hives should be constructed so that no mishap could possibly occur, alike securing bees, man, and beast from injury. All the years I have taken bees to the Heather no accidents of that kind have happened. So far as I can judge the mishap alluded to occurred through the wedges that hold the floor close to the hive—a very defective arrangement; and yet this contrivance was much boasted

of, and prizes were awarded hives because of it. Doubtless, had men of experience been chosen as judges such hives would not have been awarded a prize, and such calamities would not have occurred; and more, had this rule been adhered to, societies that are sunk below zero would have been flourishing and useful. But to my subject.

THE CLIMATE.

This is perhaps the most invigorating and health-restoring to invalids in Great Britain. I have had much experience in this, and since my first article appeared in this Journal on the subject many visitors and tourists are resorting to it. Houses are scarce, but the ground is cheap, and a railway is surveyed for between Elvenfoot and Leadhills.

THE FLORA.

This is varied; every flower we find yields honey, and some of them abundantly. I have read the criticisms of several persons on honey-yielding plants, who no doubt thought themselves qualified to do so, condemn Sweet Alyssum as a bee flower. Here it not only yields honey most abundantly, but the florets are more like those of Candytuft than the Sweet Alyssum that grows with us.

THE SOIL

Appears to be varied, but a large portion of it is evidently that from the rocks, and is stony. There is also peat, but I am not geologist enough to describe it further than there is the slate formation, and gold, and silver, and lead, while Whin is most prominent. As some plants and flowers grow here vigorously I thought the soil would be suitable for pot plants, but the gardener whom I asked for this information could not give it, though he showed me in his collection of Begonias a seedling of a crimson colour measuring 5 inches in diameter.

HIVING THE SWARM.

Having prepared myself with supers and tools for manipulation only, having no hive I undid the screws and opened the hive, destroying all queen cells, then added two supers to the two already nearly filled, hived the swarm in them, and immediately replaced them. This hive swarmed because of the deposition of the old queen, as is oftener the case than some imagine, and not for want of room. It went to work vigorously, and has its four octagon supers well filled, from 20 lbs. to 22 lbs. each. This is not bad considering the unsettled state of the weather since the 7th of July, and it is now the 26th of August, the first settled morning we have had. Had the weather been fine I doubt not but good hives would have risen in weight 200 lbs. or more. As it is some of them are already nearly 100 lbs. heavier. The bees never ceased working while it rained if calm, but being at a high altitude wind often prevailed. The heavy rains reported elsewhere we almost escaped.

HONEY PROSPECTS.

We hear from various sources that the Heather honey harvest is a failure. I have been more fortunate, although I have only half of my hives at the Heather. The bloom lasts here longer than on any moor I have witnessed, six weeks will not exhaust it. The Clover harvest has not been a success everywhere, but we hear of one bee-keeper in Invernesshire who has 1044 lbs. from very few hives, but the number is not stated.

THE OCTAGON HIVE.

I have throughout the year endeavoured to relieve my mind of the belief that the octagon or Stewarton hive is superior to any other, but cannot. It wintered best, swarmed first, and has given the most supers, and I must therefore stereotype it as the best hive for those who keep bees for honey for their own use, the squares being best for producing small saleable supers.

HONEY GATHERED.

This will perhaps astonish some readers. There are several things, however, that must be explained; the pasturage is good

and honey-yielding, the hives are favourably situated, strong in bees, which are foreigners. On the evening of the 12th August I was assisted to weigh two hives; one was 92 lbs., the other 122 lbs. in weight. On the following evening at the same hour the first mentioned weighed 125 lbs., gathering a total of 33 lbs. on one day, the greater part of it being showery. This is, perhaps, as high a record as has ever been made in this country. We did not weigh any more of them owing to their height and weight, or even a greater result might have been discovered, as this hive was not the heaviest. It is a crossed Syrian. A much heavier hive, a crossed Cyprian, stands by the side of it. I am glad to say my experience at the moors has been interesting to me, and trust I may have something to say both interesting and instructive to bee-keepers in future issues.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

E. H. Krelage & Son, Haarlem, Holland.—*Catalogue of Dutch Flower Bulbs*, 1889-1890.
Seeger & Tropp, 112, Lordship Lane, East Dulwich, London, S.E.—*Catalogue of Orchids*, 1889.
Dickson, Brown, & Tait, 43 and 45, Corporation Street, Manchester.—*Catalogue of Bulbs*, 1889.
Webb & Son, Wordsley, Stourbridge.—*Bulb Catalogue*, 1889.
G. Shrewsbury, 122, Newgate Street, London.—*Illustrated Lists of Stoves, Hot-water Apparatuses, &c.*
G. E. Elliott, 97, Bradford Road, Huddersfield.—*List of Bulbs, Roses, &c.*
Fisher, Son & Sibray, Handsworth Nurseries, Sheffield.—*Catalogue of Bulbs and Winter Flowering Plants.*
James Yates, Stockport.—*List of Bulbs and Flower Roots.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Lavender Culture (*R. M. & Co., Manchester.*).—The information you require is in type, and will appear in an early issue.

Primula (*H. E.*).—Very much depends on the size and vigour of the plants, also on the temperature and position in which they are grown, for having them in the best condition about the middle of November; but you will probably not lose by allowing the flower spikes to extend towards the end of September.

Peaches and Grapes (*Alfred Bishop*).—The Peaches from large trees that were removed last autumn and are heavily cropped this year are very good indeed, one being 9½ and the other 9¼ inches in circumference, and the quality of both excellent. The Grapes from Vines formerly weak, the crops shanked and the berries not coloured, are also satisfactory. The berries are above medium size, and we suspect no fault has been found with either their colour or quality at the dessert table. We shall be glad to receive the account of your treatment in improving the trees and Vines you are good enough to offer to prepare for publication. We readily afford space for details of successful practice, as they are of service to many readers.

Withered Tomato Leaves (*E. M. B.*).—When such soft leaves as Tomatoes are wrapped in dry paper this extracts the moisture from them, and they invariably arrive in a condition very different from when they were posted. Those you sent had not a particle of moisture in them, but could be crumbled like dried herbs. There appear indistinct remains of fungus similar to that which attacks Tomatoes, but

generally the leaves appear as if the plant were in an exhausted state. Cut off useless and affected leaves, and dust the remainder with sulphur, and we do not think you need be under any apprehension of anything injurious passing from the Tomatoes to the fruit trees. If you would like us to make a further examination we are quite ready to do so if you send leaves packed in newly cut grass, so that they reach us as fresh as when cut; also state whether the plants are in pots or planted out, with a brief record of your treatment. We are convinced that half the evils to which Tomatoes are liable are brought about by errors in culture.

Galls on Oaks (S. Bilton).—These are caused by a small fly. The females of these gall-flies (which belong to the order Hymenoptera) are provided with a peculiar apparatus for egg-laying, by means of which they are able to insert one or more eggs with a small quantity of fluid into the part chosen for attack, and thus set up an irritation in the living tissues which causes the diseased growth, resulting in the shape of galls. In the case of the *Cynips Kollar* the egg is laid in the young bud when forming in the axil of the leaf, and the consequence is the globular growth of cellular tissue which we find, with the grub lying in the middle: towards autumn this changes to a pupa, and generally the gall-fly comes out shortly after, but sometimes not until the following year, or possibly even later. It is furnished with four transparent wings; the body and abdomen are of a rusty or ochreous brown, and the base of the abdomen pitchy. As yet females only have been observed.

Insects and Insecticides (E. Wilson).—We can only repeat what we have previously said on this subject, that the various kinds of insecticides as far as we know are all good if rightly used. Nicotine soap, Gishurst compound, Fir tree oil, Lemon oil, used in accordance with the instructions of the vendors, will destroy aphides; but in the interests of safety rain water should be used for mixing purposes. Fir tree oil, for instance, mixed with some kinds of spring water, is injurious to the tender foliage of the plants and trees; but the same quantity mixed in rain water is perfectly safe. A mixture of soft soap and quassia, 2 ozs. of each to a gallon of water, is safe and serviceable, and may be used with great advantage once a week before any insects are visible; it is both a deterrent and destructor, and it is much better to deter than to destroy. Tobacco water is a well-proved remedy, the cheapest and best being the London tobacco juice, which is made from duty free tobacco, in accordance with a special grant, for the destruction of insects.

Grubs in Soil (A. A.).—The grubs of the cockchafer are most difficult to destroy amongst growing crops without at the same time injuring them. The ammoniacal liquor from gas works can be diluted so as not only to be safe but beneficial to vegetation, and at the same time obnoxious to underground pests. The stronger it is the more effectual against these, and the degree of strength the crops will bear can be determined by a few small experiments. In the absence of gas liquor petroleum violently mixed in soapsuds with a little soda is good for the same purpose, and if not too strong acts as a manure that is especially good for Strawberries, and it is in beds of these that you find the grub so destructive. Try the effect of a wineglassful of petroleum in a gallon of soapsuds on a plant or two that may be attacked, thoroughly saturating the ground, and note the result on the plants and grubs. Perhaps the former may endure a stronger application, but it is important that the mixture be briskly stirred at the moment of using. When ground is vacant gas lime is one of the best of applications in clearing off various kind of grubs. It varies in strength considerably according to the time it is exposed to the air, and to be the most effectual it should be used fresh. We have applied it at the rate of a quarter of a pound to the square yard, well mixing it in the soil in digging, not burying it in heaps, with considerable advantage, but should not like to do so within two months of sowing or planting, though we know heavier dressings have been given with safety, and probably with benefit, when the land could have a longer rest.

Raising *Clerodendron fallax* from seed (J. R. S.).—A correspondent some time ago supplied the following particulars of the system he adopted, and they convey the information your require. "The seeds were gathered from an old plant in the autumn, and in the first week of the succeeding March they were sown in a pan and placed in a heat of 60°. The soil used was finely sifted sandy peat. When the seedlings came up (and they were not long in doing so), they were almost immediately large enough to occupy 2-inch pots, and in potting them the same kind of soil was used, with the addition of a few handfuls of silver sand. They were kept in the same place until they were large enough to be shifted into 4-inch pots. When the plants were again established they were removed to a more airy place with plenty of light and shaded from the midday sun, but kept close to the glass. They had a temperature of 55°, with air admitted both at the back and front of the house, air being occasionally admitted all night, according to the weather. They remained in this position up to the opening of the first flower, but they were shifted into larger pots as they required until they were in 8 and 10-inch pots, according to size; these were their blooming pots. At the last two pottings a third of turfy loam was added to the compost, and one-fourth well decomposed cow manure finely sifted, also a few handfuls of charcoal broken fine. This mixture of soil will be found to improve the colour of the foliage and increase the size of the individual flowers. Water the plants plentifully at the root when required, but avoid syringing the foliage in the early part of

the day, or even at any time, as a good moist atmosphere will be sufficient for the plants in the comparatively low temperature in which they are growing. The principal insect enemies are red spider and green fly. The attacks of the former will be best guarded against by moisture in the atmosphere, and never allowing the roots and foliage of the young plants to become dry. For green fly the usual means of destruction by fumigation will answer; this should be particularly attended to just before the first flower opens, because if a few of these insects pass unobserved by the time the flowers expand there will be multitudes of them, and fumigating then will bring off all the flowers which are open."

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H. J. P.).—*Lycaste Deppei*. (W. Reading).—Your previous letter, with specimen, has not been received. The flower spike you now send is apparently a *Bulbophyllum*, but the material was too imperfect to permit of determination. Send us a portion of the plant if possible.

COVENT GARDEN MARKET.—AUGUST 28TH.

No alteration. Market very quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve.. ..	2	0 to 4	0	Oranges, per 100	4 0 to 9 0
" Nova Scotia and	2	0	0	Peaches, dozen	2 0 8 0
" Canada, per barrel	0	0	0 0	Plums, $\frac{1}{2}$ -sieve	3 0 4 6
Cherries, $\frac{1}{2}$ sieve	0	0	0 0	Red Currants, per $\frac{1}{2}$ -sieve	0 0 0 0
Grapes, per lb... ..	0	6	2 6	Back	0 0 0 0
Lemons, case	10	0	15 0	St. Michael Pines, each	2 0 6 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	1
Asparagus, bundle	2	0	5	0	Mushrooms, punnet	0	6	1	0
Beans, Kidney, per lb. ..	0	2	0	4	Mustard & Cress, punnet	0	2	0	0
Beet, Red, dozen	1	0	2	0	Onions, bustel	3	0	4	0
Broccoli, bundle	0	0	0	0	Parsley, dozen bunches	2	0	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	Parsnips, dozen	1	0	0	0
Cabbage, dozen	1	6	0	0	Potatoes, per cwt.	4	0	5	0
Capsicums, per 100	0	0	0	0	" Kidney, per cwt.	4	0	7	0
Carrots, bunch	0	4	0	0	Rhubarb, bundle	0	2	0	0
Caniflowers, dozen	2	0	4	0	Salsify, bundle	1	0	1	6
Celery, bundle	1	6	2	0	Scorzonera, bundle	1	6	0	0
Coleworts, doz. bunches	3	0	4	0	Shallots, per lb.	0	3	0	0
Cucumbers, each	0	3	0	6	Spinach, bushel	0	3	0	0
Endive, dozen	1	0	2	0	Tomatoes, per lb.	0	6	0	0
Herbs, bunch	0	2	0	0	Turnips, bunch	0	4	0	0
Leeks, bunch	0	3	0	4					

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.	
Arum Lilies, 12 blooms ..	2	0 to 4	0	Lilium longiflorum, 12		
Asters, per bunch, French	0	9	1	blooms	2	0 to 5
" doz n., English ..	3	0	6	Maidenhair Fern, doz.		
Bouvardias, bunch ..	0	6	1	bunches	4	0
Caruations, 12 blooms ..	1	0	2	Marguerites, 12 bunches	2	0
" 12 bunches ..	3	0	6	Mignonette, 12 bunches	1	0
Chrysanthemums, dozen				Myosotis or Forgetmenots		
blooms	1	0	3	doz. bunches	1	6
Chrysanthemums, dozen				Pansies, dozen bunches ..	1	0
bunches	3	0	6	Pelargoniums, 12 trusses	0	6
Clove Carnations, 12 bunches	6	0	9	" scarlet, 12 bunches	2	0
Cornflower, doz. bunches	1	0	3	" Pink, 12 bunches	3	0
Dahlias, dozen bunches ..	2	0	6	Pinks (various) 12 bunches	3	0
Eucharis, dozen ..	2	0	5	Poppies, various, 12 bunches	2	0
Gaillardia picta, 12 bunches	2	0	4	Roses (indoor), dozen ..	0	6
Gardenias, 12 blooms ..	2	0	4	" Mixed, doz. bunches	3	0
Gladoli, per bunch ..	0	6	1	" Red, dozen bunches	4	0
Gladolus brechenleyensis,				" 12 blooms ..	0	6
dozen sprays	1	0	1	" Tea, white, dozen ..	1	0
Helianthus, or Sun-flower,				" Yellow	2	0
dozen bunches ..	3	0	4	Spiraea, doz n bunches ..	0	0
" large, dozen blooms	0	6	1	Stephanotis, doz. sprays	2	0
Lap geria, 12 blooms ..	1	0	3	Stocks, dozen bunches ..	3	0
Lavender, dozen bunches	4	0	6	Sweet Peas, doz. bunches	2	0
Lilium anatum, 12 blms	2	0	4	Sweet Sultan ..	3	0
				Taberoseas, 12 blooms ..	0	6

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, per dozen	3	0	to	9	0
Arum Lilies, per dozen	0	0	0	0	0	Geranium, Ivy, doz.	3	0	5	0	
Arborvitae (golden) dozen	13	0	24	0	0	Hydrangea, per dozen	9	0	18	0	
Asters, 12 pots	3	0	6	0	0	Lobelia, per dozen	3	0	6	0	
Begonias, various, per doz.	4	0	12	0	0	Marguerite Daisy, dozen	6	0	12	0	
Balsams, per dozen	3	0	6	0	0	Mignonette, per dozen	3	0	6	0	
Caladiums, per doz.	0	0	0	0	0	Mask, per dozen	2	0	4	0	
Calceolarias, per dozen	4	0	8	0	0	Myrtles, dozen	6	0	12	0	
Christmas Rose	0	0	0	0	0	Nasturtiums, per dozen	2	6	4	0	
Chrysanthemums, dozen	6	0	15	0	0	Palm, in var., each	2	6	21	0	
Cockscombs, per dozen	3	0	6	0	0	Pelargonium, scarlet, 12	2	0	4	0	
Dracaena terminalis, doz.	21	0	42	0	0	Pelargonium, per dozen	4	0	9	0	
Dracaena viridis, doz.	12	0	24	0	0	Rhodanthe, per dozen	0	0	0	0	
Eriogonum Cavendishi, doz.	0	0	0	0	0	Saxifraga pyramidalis,					
Enonymus, var., dozen	6	0	18	0	0	per dozen	0	0	0	0	
Evergreens, in var., dozen	6	0	24	0	0	Solanums, per dozen	6	0	12	0	
Ferns, in variety, dozen	4	0	18	0	0	Spirea, per dozen	0	0	0	0	
Ficus elastica, each	1	6	7	0	0	„ palmata, per doz.	0	0	0	0	
Foliage plants, var., each	2	0	10	0	0						



POINTS OF HUSBANDRY.

To sow Rye Grass, Clover, Lucerne, Sainfoin, and mixed seeds with a corn crop has become a very general custom, but in a wet season the growth of such green crops among the corn becomes so rampant as to prove troublesome at harvest time, and it is worthy of consideration whether a more frequent departure from the rule is not advisable. Clover may perhaps form the exception, for where Clover is sown so extensively as in the eastern counties it is always done with the intention of devoting one growth for seed, and with a favourable weather a full crop of Clover seed is always profitable. The apparent advantage of sowing seeds with corn is that when the corn is harvested there are the seeds established in the soil in readiness for an early start next season. But if seeds are sown alone early in spring they come into use in June and afford an excellent change for ewes and lambs. In Lincolnshire seeds are sown alone after roots, the quantity used per acre being 4 lbs. Red Clover, 4 lbs. Cow Grass, 4 lbs. Trefoil, 1 peck Italian Rye Grass. We may explain that Cow Grass is a perennial form of Red Clover, an excellent forage plant bearing both drought and frost better than the common Red or Broad Clover. With the above mixture is sown 4 lbs. of Rape seed, which at first affords some shelter for the young Clover plant, and is subsequently cleared off by the sheep, the seeds standing over for the second year. When the layers are thus left for two years a five-course shift is followed, and instead of proving exhaustive the plan is highly beneficial, the sheep folding and fibrous roots of the grass affording sustenance to the next crop. In the adjoining county of Nottingham the mixture for two years' layers consists of 1½ peck of Perennial and Italian Rye Grass, 10 lbs. of white Clover and Cow Grass, and a small quantity of Sheep's Parsley (*Petroselinum sativum*), of which sheep are very fond, and it is considered to check liver-fluke and red water.

After a two-years ley a little extra attention is necessary to eradicate couch grass when the ley is broken up, some of this pest being almost certain to be found, and if got rid of then much subsequent trouble would be avoided. Farmers suffer a terrible annual loss from the exhaustion of soil by twitch, and they should be on the alert to do their utmost to eradicate it upon every occasion. Headlands are often a prolific source of twitch and other weeds, and when the condition of the land is at all doubtful it is far better to make a dead fallow of the headlands rather than to crop them. Under the agricultural depression it is notorious how sadly many farms have fallen out of condition, foulness and poverty being the more prominent evils. The cause of this is said to be a want of means on the part of farmers, but it is very questionable if the evil is not owing in a large measure to mismanagement, to a want of timely culture. Now as to foulness, it is certain that the condition of a farm in this particular depends very much upon autumn cultivation, and as was recently suggested, stout boys or lads trained to the work can get through a lot of work with the broadshare, light plough, and harrows upon the stubbles, so that by the time the last field of corn is saved very much of the land might be cleared, of superficial weeds at any rate. An able master will not allow prejudice on the part of workmen to exercise an adverse influence upon his plans, and where the horsemen join the other labourers in taking a full share of harvest work the horses should not remain idle, but should be used in the manner we indicate whenever they are not required for carting corn.

This question of cultivation has several aspects, one of which is the apportionment of a farm to different crops. There is no

doubt that in Essex and other counties of East Anglia most of the farms have been entirely out of proportion, and in this respect a good lesson may be had in Warwickshire and Northamptonshire, where there is plenty of heavy land. In Warwickshire there are farms with the soil entirely of the blue lias clay, wherein excellent corn can be and is grown, yet fully one-half, and in some instances two-thirds of the land is laid down to permanent pasture. See what this means in keeping down labour! About half of such pasture would be laid in for hay, and the remainder grazed. Now we do not advise an effort at sweeping reform by a wholesale attempt at laying down land to permanent pasture, even with the landlord's help; but we are bound to insist upon the expediency of the prompt adoption of a system of alternate husbandry with a large proportion of the land in four-year layers. We have applied this system to a heavy land farm on the borders of Essex, a large quantity of excellent hay has been made, and there are now some 600 "keeping" sheep there, the weekly return for which pretty well pays the labour bill, in addition to which the sheep-folding is steadily tending to enrich the land.

WORK ON THE HOME FARM.

Adverse weather still prevails, and harvest work lags under the depressing influence of cloudy skies and wet days. The whole of our Wheat is cut, and a few stacks are finished, but there is very much of it out in shocks yet, and without a change to settled weather we anticipate a certain proportion of sprouting corn in the sheaves again. Much of the Barley is ripe, and we only want fine weather to save it. The outlook is most serious, for prices at best are low enough, and any depreciation in quality is quite certain to bring them still lower.

A few stubbles have been cleared, and after fallen corn has been eaten by pigs or sheep they should be at once broken up, after any beds of couch grass have been got up with steel forks. One of the best root farmers in the country always has enough of his stubbles prepared for Mangolds in autumn by first getting out any twitch, then a Coleman's cultivator is used along and across it with the grubber tines, four horses being used to it. It is left in a rough open condition for several weeks fully exposed to atmospheric influences; farmyard manure is then put on it at the rate of thirty loads per acre, and ploughed in, the work being finished before Christmas. In spring it is harrowed twice with a heavy drag harrow, after which about 4 cwt. per acre of chemical manure is sown broadcast, light harrows being then passed over, followed by rollers, and then the seed is drilled at the rate of 7 lbs. to the acre. Much depends upon weather, but the plan is to sow by the first or second week in April. We regard 7 lbs. of Mangold seed as the correct quantity. One of our bailiffs was positive about 5 lbs. being sufficient, and generally he is successful in obtaining a full crop, but this year a thin plant on the farm under his care appears likely to convert him to our view of the matter. We hold that it is well that a bailiff should have opinions of his own—aye, even positive opinions about his work, and we avoid all unnecessary interference with an able earnest man who throws himself entirely into his work, and who is certainly worthy of support and sympathy.

METEOROLOGICAL OBSERVATIONS.

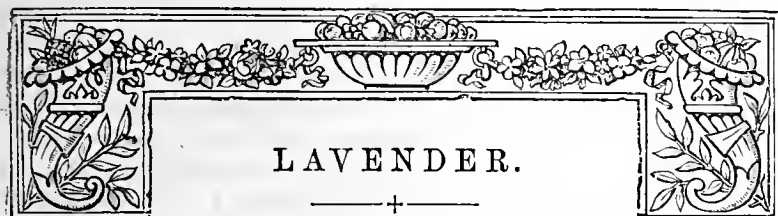
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. ter at 32° and Sea Level.	Hygromete- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1889. August.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Ir.
Sunday..... 18	30.018	61.6	55.9	E.	60.8	70.4	49.4	109.8	45.1	—
Monday..... 19	29.682	63.6	58.7	E.	60.8	73.4	52.1	100.9	46.2	0.313
Tuesday..... 20	29.274	58.2	56.2	W.	60.9	67.0	57.1	88.8	55.0	—
Wednesday.... 21	29.537	57.9	55.6	S.W.	59.9	61.9	53.6	98.6	51.1	0.186
Thursday..... 22	29.506	57.5	54.0	N.W.	59.2	67.2	54.5	113.9	50.1	0.062
Friday..... 23	29.969	55.9	54.8	W.	58.9	64.2	48.0	105.9	44.4	0.039
Saturday..... 24	29.552	53.3	51.9	S.E.	58.2	64.4	51.5	106.4	48.4	0.268
	29.691	58.3	54.7		59.8	67.5	52.3	103.5	48.8	0.868

REMARKS.

- 18th.—Fine and generally bright.
 19th.—Bright early, cloudy with once or twice spots of rain in the morning; overcast, hazy and oppressive in the afternoon; wet night.
 20th.—Wet till 10 A.M., then generally overcast, but one or two gleams of sun. Gale all day.
 21st.—Cool and generally cloudy morning; heavy shower at 2 P.M., then bright till 5 P.M., and wet evening.
 22nd.—Cloudy early; fine and frequently bright from 11 A.M. to 3.30 P.M., then frequent heavy showers.
 23rd.—Fine and bright.
 24th.—Wet till 11 A.M., then bright till 3 P.M.; heavy rain with thunder and lightning 3.30 to 4 P.M., and fine evening.
 A showery and unsummerlike week. Range of temperature small, the maxima being low, though the mean was but little below the average.—G. J. SIMONS.



DWELLERS in the metropolis are familiar with the itinerant vendors' somewhat plaintive cry, "Sixteen good branches a penny, sweetly blooming Lavender!" and are accustomed to regard it as one of the signs of a waning summer, but few probably give a thought to the extent of the supply needed to meet the demand for the cut flowers or their product in the form of Lavender water. Yet the culture of this plant forms an important branch of horticultural industry, and one that might be considerably extended with advantage both to the owners and occupiers of land. As a garden plant all know how accommodating it is. The driest situation and the poorest soil are assigned to it, yet it annually and for years produces a plentiful crop of its soft tinted fragrant flowers, which are valued not a little in many a cottage home. But there is another phase in its culture of a more important character—namely, the production of flowers in quantity for the market and the distillery. This gives employment to numbers of people, and some of the land so occupied is in favourable seasons, and on the average, much more profitable than that devoted to what may be termed standard crops.

There are some great advantages in favour of Lavender culture, though, of course, there are also some attendant drawbacks. The great point in its favour, however, is that what is ordinarily termed poor land, scarcely fitted for maintaining any other form of vegetation than a scanty crop of grass, suits Lavender admirably, indeed much better than soils of a rich character. The importance of this cannot be overrated, for there are thousands of acres in the southern counties of England, especially in the chalk districts, that might be profitably utilised in the culture of the plant. It is usually grown in low-lying situations and soils that encourage too rapid growth, as though the plant is benefited by a fairly fertile soil excessive vigour is unquestionably injurious finally.

One of the chief defects or disadvantages to be contended with is that where Lavender is cultivated mainly for distillation its success is largely dependent upon the character of the season, more especially upon the two summer months of June and July preceding the period of cutting. In sunless wet summers the yield of oil is greatly reduced, and this is a matter which no skill on the part of the cultivator can overcome. On the other hand, many find that the best results are obtained in pecuniary returns by selling the flower spikes in the market or to private purchasers for drying, as the prices are less influenced by the season except so far as the supply is affected.

Another difficulty is that the plant has an unpleasant habit of dying in pieces, and a field of apparently healthy plants may be reduced to half its former value in the next year. Frost in severe winters has something to do with this, and some of the evil results have also been ascribed to the action of a fungus; but beyond all, failure in this respect is undoubtedly due to want of care in maintaining a succession of young stock, and to planting in too rich a soil. Mr. E. M. Holmes, Curator of the Pharmaceutical Society's Museum, has stated in a contribution to the "Encyclopædia Britannica," that in 1860 much devastation was caused to the Lavender crop by a severe frost, and since that time the plants have been subject to the attacks of a fungus, which has proved so destructive that the growers in some districts have been compelled to discon-

tinue its culture. Market Deeping, in Lincolnshire, which was at one time noted for its Lavender production, is given as an instance of the enforced discontinuance owing to the fungoid troubles. Where, however, the acreage has been reduced in southern counties it seems to be mainly traceable to other causes.

For example—Mitcham, in Surrey, has been for at least a hundred years celebrated for its Lavender, and in all the works of reference containing any particulars on this subject, including the most recent, it is said that the plant is there "cultivated extensively." At our time this was correct, but there has been a considerable change in recent years, for now only a few small plots can be found in Mitcham itself, though the cultivation has been extended greatly in neighbouring districts. The few small patches now seen are of a very unpromising character, the plants seem to be too old, many are in a half-dying state, and they do not receive even the small amount of attention they require in keeping them clear of weeds. It often happens that plants which need the least attention are the most neglected, and this is certainly the case with Lavender in several places. Last autumn a tract of land in a neighbouring district of Surrey, sloping in a northerly direction down to a small stream, was planted with Lavender, and, as might have been expected in so cold and damp a situation, the greater portion was lost during the winter, and the remainder was in such bad condition that it had to be pulled up or ploughed in to make room for other crops. Another field more favourably situated was planted about the same time, and the plants made good progress, but during the present summer the ground has been allowed to become infested with weeds to such an extent that the Lavender is nearly smothered, and quite a season will be lost in its culture.

At one time it was estimated that in Mitcham and the neighbourhood 300 acres of land were devoted to Lavender. I have not been able to ascertain the exact space now occupied, but the falling off at Mitcham is amply compensated by the extended cultivation in Carshalton, Beddington, and Cheam. In Kent also it has received some attention in recent years, while near Cambridge and Hitchin it has been grown for a long period. At the last named place in particular it is said to have been grown for at least 300 years, though it only became of commercial importance in that district during the present century. The total acreage under Lavender has probably increased notwithstanding the fungus attacks, frosts, and adverse climatal influences generally.

The method of cultivation adopted by the more successful growers may be briefly summarised as follows, premising that the systems differ slightly in some districts, that here described being the Surrey practice. It may be observed that the species grown both for flower and perfume is *Lavandula vera*, a native of widely separated districts in Southern Europe and Northern Africa, mostly in stony land and warm situations on the slopes of mountains up to an elevation of 3 to 5000 feet. It is, however, cultivated in Europe in much more northern latitudes, and is reported to thrive even in Norway. Other species of *Lavandula* are grown for the sake of their oil, but their perfume is mostly of a ranker and less agreeable character, and in the case of the oil of Spike mentioned in many old works its use is chiefly in preparing pigments for painting on porcelain. *L. Spica* has long been regarded as a distinct species, but some authorities now consider it as synonymous with *L. vera*.

Lavender can be readily increased by cuttings, but the market garden system consists in dividing the roots of the plants, thus obtaining good sized slips at once with roots attached. These are planted either in autumn or spring, but preferably at the latter time, in rows 18 inches apart and the same distance between the plants, all the preparation needed being digging or ploughing the soil; but it is not necessary that it be much loosened, as the firmer it is the better it suits the plants, provided there is a free drainage for the surface water. The second year after planting every alternate row and each alternate plant in the remaining rows

are lifted and transplanted, so that the permanent crop roots remain 3 feet apart each way. Intercropping with vegetables, or anything that can be quickly removed, is customary in the first year, especially where it is the practice to place out the rooted divisions 3 feet apart at once, thus avoiding the after labour of replanting, though more ground is occupied. In the third and fourth years the plants are in their best condition, yielding the largest number of spikes and the greatest per-centage of oil when the seasons are favourable, but they are often continued on the ground for several years afterwards, and it has been stated that they will yield profitably for ten years. Retaining old plants is, however, one of the mistakes of cultivation, and unless a constant succession of young stock is maintained, rigorously destroying old roots as soon as they give signs of failing, success cannot be expected. A plantation should be made every year, and then no difficulty is experienced in keeping up the supply. To the neglect of this some of the older growers rightly attribute the majority of failures that occur.

Beyond keeping the land free from weeds scarcely any cultural attention is needed, and when at the end of July, or usually early in August, the flowers are sufficiently advanced to commence cutting the bunching is not a serious matter, and the expense incurred in this does not materially reduce the cultivator's profits. The fields have to be gone over several times, as the spikes are not all fit for cutting at the same time, and it requires a little care and experience to select the heads when they are in the best condition, with the majority of the flowers expanded. If they are intended for distillation they are conveyed at once to the stills, where either the flowers only stripped from the stems are employed, which yield the finest oil, or the stalks and flowers are distilled together, and as the oil from the latter is more volatile it is possible to separate the finer from the coarser products by retaining that first distilled over. When to be sold in the market the spikes are bunched and sent in dozens, being gathered when dry, and usually a day or so before they are wanted; thus for Monday's market, when a good quantity is sent in, it is all gathered on the Saturday, and the bunches placed in cool dry sheds. In Covent Garden Market Lavender is re-sold to dealers or retailed by the herbalists in smaller bunches. Frequently also the flowers are stripped from the stems and sold in neat little bags termed lavenderettes, or loose by measure at so much per pint.

The profits to be realised from Lavender culture with good management and moderately cheap land, that with a calcareous sub-soil being apparently the best for the purpose, are sufficient to render it well worth attention, and under favourable circumstances a very substantial return is obtained. Selling the flowers direct seems to be considered more profitable than distilling them, and when £50 per acre can be secured it certainly looks promising considering the small outlay necessary. A healthy plant three or four years old should produce at least fifty spikes, and this would give 2000 bunches of 120 spikes each, and these are sold at 5s. or 6s. per dozen bunches. This is perhaps the best return that can be obtained, just when the plants are in their prime and the weather is fine. The average probably would be scarcely more than 1000 bunches per acre, producing £25, though this ought to afford a good profit. In some bad seasons and from old plantations less still is secured, and one grower has this year only cut about 300 dozen bunches from twenty acres. There is as much difference in the yield and quality of the oil, for this is said to vary from 10 lbs. to 30 lbs. per acre of plants, and the quantity is so dependent upon the weather that it accounts for the growers preferring to sell the spikes as cut unless, as is sometimes the case, they have a still upon their land. There are several large distilleries in this part of Surrey, both at Mitcham and in neighbouring districts, and it is the custom of some of the owners to let the stills to the smaller growers for short periods until they have disposed of their stock.

The use of Lavender for domestic purposes dates back to the time of the Romans, and as it was employed in perfuming baths

the generic name was considered to be derived from the Latin verb signifying to wash. There seems to be some doubt if the true Lavender, *L. vera*, was the plant thus employed; and *L. Stæchas* is probably the species that was most generally known. At one time Lavender was supposed to be the Spikeard of the Scriptures, and Phillips, in his "History of Vegetables" (1822), devotes several pages to an attempt to prove this. Spikenard is now determined to be the product of quite a different plant—*i.e.*, *Nardostachys Jatamansi*, one of the Valerians. It is not known when Lavender was first used in medicine, but concerning its official qualities Dr. Hogg has given a full account in his "Vegetable Kingdom," in which it is noted that *L. Stæchas* "is very fragrant, and rubbed between the fingers it emits the odour of camphor, because its essential oil contains much stearoptine, which is the crystallisable principle of essential oils. It is considered useful in pulmonary affections, also as a good anti-spasmodic." *L. vera* is "bitter and aromatic, tonic, and stimulating to the nervous system." "Lavender drops" consist chiefly of oil of Lavender with oil of Rosemary, Cinnamon, and Nutmeg, coloured with red Sandalwood, and this preparation bearing the name of tincture of red Lavender is recommended as a stimulant and cordial, especially in flatulence, and to some extent as a substitute for sal volatile. Lavender lozenges are used in the same way, but are a milder preparation and a very agreeable confection. In Johnson's "Gerard" (1633) the true Lavender is mentioned as *Lavandula flore cœruleo*, and it is said respecting it, "The flowers of Lavender picked from the knaps, I meane the blew part and not the huske, mixed with Cinnamon, Nutmeg, and Cloves, made into powder and given to drinke in the distilled water thereof, doth helpe the panting and passion of the heart." The principal modern use of oil of Lavender is as a perfume, and mixed with spirits of wine or other ingredients it constitutes the popular Lavender water of the shops, and which perhaps is more largely used than any other form of scent. The oil is said to improve by keeping for two or three years, but after that time it is necessary to add alcohol to preserve its properties. The oil is contained in glands, which are chiefly found on the calyx, the corolla, and the leaves, though they also exist to some extent upon the stems and flower spikes.—
L. CASTLE.

STRAWBERRY GROWING.

SOME little time ago I noticed many of your correspondents had a good word to say for Laxton's Noble Strawberry. They did not say too much in its favour. My garden is very cold and exposed, the soil also being cold and heavy, so that nothing is favourable for obtaining early fruit; but in spite of these drawbacks I was able to gather fruit of Noble on Whit-Sunday, a good week before any other variety. The trusses were very large, and the fruit truly immense, the crop far exceeding that from Sir Joseph Paxton, which I consider far and away the best and most profitable all-round Strawberry. Noble I hear is being largely planted by the trade, and I do not wonder at it, for they would not exhibit their usual acumen if they did otherwise. I was able to obtain 2s. per pound for my earliest Nobles, and the purchasers were delighted with the fruit. No other variety was so profitable, for I obtained a much higher price for the fruit, and the crop was the largest of all. Next to Noble, Sir Joseph was most profitable, carrying an exceedingly heavy crop of handsome fruit, but not so early as the Vicomtesse H. de Thury, which succeeded Noble, and also carried a heavy crop, but the fruit was small, the flavour, however, being the best of all to my taste. To those who are now making their new Strawberry beds I would say, Plant Noble, Vicomtesse, Sir Joseph, and Oxonian to obtain an early, medium, and late crop of good fruit off plants which are all good growers. Laxton's King of the Earlies is certainly very early, and the flavour of the fruit is good, but it is a weak grower, and I do not consider it profitable. Mr. Laxton has now sent out his Latest of All, and if all I hear from a reliable source is true this Strawberry is a very valuable introduction, and should be tried by all those who, like the writer, are anxious to obtain a good thing.

Lucas I do not like, although large. Forman's Excelsior, which was the only reliable cropper on the gravelly soil of Totham, does not seem to appreciate my heavy land here. Sir C. Napier, British Queen, J. Veitch, and others were none of them half so satisfactory

as the four I have named. My crop was the heaviest I ever had, and I attribute it chiefly to my use of artificial manures. So soon as the plants commenced growing they had a good dressing of Jensen's cod potash guano (which I also found excellent for Tomatoes, Potatoes, and pot plants), and when the flowers expanded they had a light dressing of ichthemic guano. Later on, when the fruit was swelling, another application of the cod potash guano was given, the result being a heavy crop, which lasted a long time, for every berry seemed to swell and ripen in due course. I shall treat my plants in a similar way next year, and trust to obtain similar results, in which case to the query "Does fruit-growing pay?" I shall decidedly answer "Yes, if the right sorts are grown and the plants judiciously fed."—H. S. EASTY.

AURICULAS IN SCOTLAND.

So far as my own knowledge goes, and from what my correspondents state, I am warranted in saying that the principal collections of Auriculas in Scotland are now repotted. There cannot be a doubt that the period between the cessation of the plant's active growth and the commencement of the next season's growth is the proper time for repotting. That period seems to be, as a rule, from the middle of July to the beginning of September. The plants being fully at rest they, under the new conditions of fresh soil, begin to establish themselves by sending out strong roots to the sides of the pots. They have ample time before the winter checks the second growth to be firmly rooted, and during the autumn months they require little care besides watering and keeping them clean. The plants this year have been in fine condition and healthy, though with me more of the stems have required cutting-in from the extremity being decayed than is usually the case; but a little charcoal applied to the wound made everything right. The best way to do this is first to dress the wound with powdered charcoal and then place some of it on the top of the cone of earth round which the roots are arranged, and place the end of the stem upon it.

There has been a fair increase this year on most of the varieties, and I am pleased that the new "cracks" have given me a number of offsets. Since repotting all the plants are looking well, and I have good accounts from my Auricula-growing friends of their collections. No appearance of autumn blooms is reported among the plants potted within the last six weeks, but I saw last week a collection which was potted before the 10th June, in which some plants were already showing bloom, and from the appearance of the centres of many more I have no doubt ere long bloom will be plentiful. The plants were as large and as full of growth as they should be at the end of March. Their owner holds the opinion that autumn bloom is of no consequence and does not weaken the spring bloom. Most growers hold an opposite opinion, based on their experience and observation. In repotting it is not necessary to carry out the old direction of keeping the plants shut up closely for some days. The best way is to give them a good supply of water and put them back into the open frame, which of course will look to the north. One grower of an extensive collection this year placed his newly potted plants in a shady place in the open air, where they have received all the recent rains, and they are looking well and growing fast. The Auricula is a hardy plant and does not like so much coddling as some growers give it.

In Scotland this has not been a good year for seed, and even those which I crossed have not given any seed. A large grower recently wrote me that the result of his crossing was the same. I believe green fly has been somewhat troublesome in some collections, but my own plants are so often through my hands that the insects have no time to increase. If a plant is very bad with them I would recommend washing them off with pure water from a gently flowing pipe. Avoid soap and other substances which may close up the pores of the foliage. If properly done the pure water will not leave a single fly on the plant.—J. M., Dundee.

NOTES ON PEAS.

I HAVE been very much interested this week by reading the "Notes on Peas," by "W. S., Frome," in the *Journal of Horticulture*, page 174, inasmuch as in some respects his experiences are a reflex of my own, specially so as to bird depredations, and the peculiar disease he speaks of in the second paragraph of his notes. I wish I could throw some light on the subject. I have tried to get light, and am waiting now for a report from Professor Oliver of Kew on specimens of diseased Peas which I submitted to the Scientific Committee of the Royal Horticultural Society at their meeting on July 23rd. As "W. S." will see by reference to the *Journal of*

Horticulture of August 1st, page 91, the Scientific Committee referred my specimens to Professor Oliver for examination and report, and I am anxiously, very anxiously, waiting for the Professor's report. If "W. S." would not mind sending me specimens of his diseased Peas I could see whether the disease is like that of my Peas, and in return I would send him specimens of mine for his examination. He and I would both be able by this arrangement to see if the disease was the same in both instances, and we should be in a better position to profit by the report, and the instruction which may be in that report, when Professor Oliver publishes it.

The disease is evidently of fungoid origin, and has some analogy, so it appears to me, to the disease in Potatoes, though the Pea disease originates in the earth and the Potato disease in the air. I have had instances of it in my midseason and later Peas for many years, but curiously to say, not in the early kinds. This year, however, it beats the record of any previous year. My Peas are all from a collection I had from Suttons of Reading, and their germination and early growth was all that I could wish. When about a foot high, or thereabouts, the mischief began, and so virulently and speedily did it spread that soon paralysis of growth, yellow foliage, unopened flowers, and eventual death set in. My rows were about 12 or 15 yards long, and in some rows I have had only four or five plants left in the row, and those sickly ones. For instance, Sutton's Satisfaction, which by the way was a perfect satisfaction to me last year, had three plants left in it, Champion six; Culverwell's Telegraph and Prizetaker stood it a little better. Veitch's Perfection I have not had a Pea from, and Sutton's Tall Marrow and Ne Plus Ultra have done little or nothing, there being only some twenty or thirty plants in a row. The effect of all this loss of Peas has put me in a very trying position. Fortunately I have had plenty of other vegetables, but as everyone knows, nothing can quite compensate a gardener for the loss of a crop of Peas. Added to this, the very sight of the sickly rows of Peas has been a daily misery to me, and in addition to the other trials, the birds have been more than usually ravenous, and as for various reasons I cannot use the gun much in the kitchen garden here, they have feasted on my poor Peas to their heart's content and my daily vexation.

As to the cause of the disease I am quite in the dark. The soil here is partly clayey and partly sandy, being on a "fault." The Peas this year are on a piece of the heavier portion, and this portion, lying near to a corner where we rot down yearly the leaves from shrubberies and lawns, with the lawn mowings and sweepings of the summer, it gets every year a heavier dressing of decayed vegetable matters than it does of farmyard manure. Whether it is the presence of too large a proportion of decayed vegetable matter or not I am not in a position to say. I limed it for Potatoes last season, and have thought of gas-liming this, but I am anxious to know whether this is the proper corrective or not, and it is just this which I am hoping Professor Oliver's report will teach me and all those who are like circumstanced. To frustrate the birds I have rather made up my mind to grow nothing but dwarf kinds of Peas, not to rod them, and throw a net over them when coming into use.—N. H. POWNALL, *Lenton Hall Gardens, Nottingham.*

CANKER IN FRUIT TREES.

I NOTE my friend Mr. Hiam keeps "pegging away" as regards the fruit tree canker being caused by an insect. Why need he trouble more about it? He believes it is; I believe it is. If others will not, it is of no use going on, nor should I write now, but a curious incident has occurred in the garden of a friend of mine which I wish to make known. He has a number of fruit trees of various sizes and ages. None has ever had or now has any canker. Lately he bought several young trees to plant about those already in the garden. This is the second year of the new trees, and every one of them is cankered. This being so, why were the others free? If it comes from the roots the old trees should have been well cankered; if from frost, why do they escape and the new importation of the same sorts not? Why, indeed? But the fact remains, and my friend intends pulling all the new ones up. My theory is they were impregnated with the insect pest when they came, though they looked healthy; hence the canker. Of course I cannot mention the nursery whence they came, but he assures me that apparently there was nothing the matter when he planted them. Let those who say it is the root, those who say it is the frost, and those who say it is caused by an insect, think the matter over, and I trust settle it right out.

For my part, my own experiments have so sufficiently proved to my satisfaction that it is an insect, that I trouble no more about it. If others think differently, well and good. If they believe their theory, I believe mine, thoroughly. I took several trees, some of which were cankered in the branches and in the stem. Each alternate one I had cleaned thoroughly, and twice a year covered with Gishurst compound. The canker healed over, and no more came. Several of the other trees not so treated became mere wrecks. I have no more to say on the

subject, and only trespass now, as I consider the above throws new light.—HARRISON WEIR, *Iddesleigh, Sevenoaks.*

MR. J. HIAM is about the best example of a tired man I have met with, for the more tired he gets the better he works. He compliments me on my superiority as a writer. I hope he will not do that, for if he had a good case I should evidently have to take a back seat as a controversialist. So long as he confined himself to the statement that insects caused canker in his own trees I did not deny the possibility, but when he alleges that insects were the originators of the evil at Impney and Packwood Grange I suspect it will tax his ingenuity to the utmost to prove his allegation.

He informs us he has seen the insects on the trees in those gardens. No doubt. So did I, and brought some of them to London. I suspect there never was any canker without insects. The case is similar to flies in a sugar basin, but though there visibly enough I do not suppose many persons would charge them with being the cause of the sugar.

No, Mr. Hiam, though I respect your belief, admire your earnestness, sympathise with you on your sore feet, regret your "soaking" in searching for truth, and almost lament your loss of 6s. and 1s. 9d. railway fare, I cannot agree that the insects you "discovered" on the trees referred to caused the canker amidst which they revelled till you prove that flies cause sugar.

Mr. Hiam asks in all seriousness whence the canker accompanying insects come from. He ought to be the best authority on that. I cannot even tell him exactly where the flies "come from," and they are much better to see than his microscopic friends. They are in the basin when the sugar is there, and depart when it vanishes. Mr. Hiam's insects come, he tells us, where there is no canker, cause this to appear, then travel on to fresh points of attack, and so on from branch to branch and tree to tree, eating till they cause great gaping wounds and gnarled swellings. But they miss some trees entirely—not, Mr. Hiam now says, because they have any dislike to them, for he had to "give up" that theory. What can be the reason, then, that they seize on a Ribston Pippin Apple, for instance, and turn up their little noses at a Golden Noble, passing it in contempt? Mr. Hiam had a good reply once—their preference for certain varieties; but now he has none, or at least none has appeared. Do they not visit one tree because its tissue is ruptured and feed on what they find there, leaving the other alone because there is no ruptured tissue, nothing on which they can subsist, no sugar in the basin? That is what sensible insects would do, and there seems a good deal of intelligence in what we call the lower forms of creation when they are searching for food.

Then we have the singular phenomenon in, we will say, Mr. Tonks' garden of, according to Mr. Hiam's theory, insects puncturing the trees and eating holes in the branches, and the more numerous the insects are and the more they eat the greater of necessity become the rugged chasms. That all seems logical enough, but here comes the flaw. Mr. Hiam says the insects are there yet, eating away as usual, yet the longer they graze the smaller the wounds become. We thus arrive at the extraordinary result that the insects eat for a few years and enlarge the wounds, then go on eating them and reduce them to the healing point, for Mr. Hiam cannot deny that for one wound that is growing in Mr. Tonks' garden a thousand are healing, and healing rapidly.

This healing was contemporaneous with soil improvement and the introduction of food elements that were previously lacking, and without which the trees were deficient in minerals that are requisite to their well being, and for fortifying them against rupture-destroying agencies, the chief of which is frost. Well fed—that is, "ripened"—wood escapes, where ill fed or unripened parts succumb, and trees that are naturally hardy in constitution escape injury, while those relatively tender do not, just the same as Mr. Hiam gets a "soaking," but I hope by his inherent vigour only feels temporary inconvenience, while a weaker man might suffer for months.

When it is suggested that Mr. Tonks "will not let it enter his head" that insects caused the canker in his trees (which he cured with the insects on them), I am bound to suspect that legitimate arguments are getting scarce, and am inclined to think that Mr. Hiam's reveals the weakness of his case in that observation more than anything can do that I have said. The insects will remain if allowed so long as new cortical layers extend and push off the old and decayed, for in that matter they find sustenance.

The presence of insects being admitted, any interchange of cankered parts would be obviously useless. It would be more generally useful to know precisely what to apply to trees to destroy or prevent insects, and thus, according to Mr. Hiam's theory, banish canker from gardens and orchards without interfering with—taking anything from or adding anything to—the soil. As I have not much of a name, I will content myself with the usual initial.—W.

P.S.—I have to close somewhat abruptly to catch the train for Impney at a cost of, I fear, much more than 6s. railway fare.

MR. HIAM informs us he was footsore and weary when he visited me. Even if I had known this, my plain duty was to give him every facility to attain the object of his visit. Therefore disregarding my own comfort, for it was gently raining, I suggested the inspection of my trees, to which he assented. I led him at once to some of the worst cases; trees which three years ago had been marked for destruction. The old wounds were full of crevices, in which various insects delight to hide, some of them doubtless to feed on the decaying bark, &c. He

took no notice of the innumerable instances where the edges of the bark were completely healed; but, after some search, he found two or three cases where struggling growth, having contended during three seasons with the combined action of canker wounds, drought, cold, wet summer, and two attacks of caterpillars, had this season finally succumbed. He took samples of these, and after examination with a pocket lens submitted them to the microscope; then, amongst other insects, pointed out one which he said was the cause of canker. It appears, now, that Mr. Hiam believes this to be "a species of the family of the red spider." Now, the red spider belongs to the order acarina, of the class arachnida. The specimen he showed to me is from its configuration a true insect, and as the arachnida are not insects, it clearly cannot belong to the family of the red spider. If Mr. Hiam can make a mistake of such importance, why is his dictum to be accepted, supported as it is only by his assertion, and the presence, possibly accidental, of the insect in the crevices of canker wounds? I again venture to advise him to search for these insects in the crevices of wounds not caused by canker, and also to send some other specimens of them to the *Journal of Horticulture* for identification. He states that "W." led him to believe that these insects had all disappeared from my garden. I cannot find in the pages of the *Journal* that "W." has ever made a statement which ought to lead anyone to suppose anything of the kind. Neither he nor I knew what kind of insect was referred to; neither of us has ever disputed its presence.

Mr. Hiam betrays a want of knowledge as to another species of insect. I directed his attention to a *Plumbago capensis* affected by a peculiar disease, a marked symptom of which is decay of the roots. This has for many years seriously injured my plants, and as yet I have found no remedy. He examined some of the leaves, and found, as was probable on a diseased plant, they were infested with insects "of a new description" to him. It will scarcely be credited that these insects were the common thrips, unfortunately too well known to every gardener. When he assigned them as the cause of the disease, I trust my reply was not so rude as "pooh pooh;" it is the less likely, as the expression very rarely if ever is used by me, though it must be admitted that the reduplicated word may be a concise paraphrase of what was said. Mr. Hiam has taken up the subject of his hobby with a very praiseworthy object, and the same hobby might be ridden by others with possible advantage to fruit growers in general; but more evidence is required before he can be admitted to be in a position to feel confident that he has "mastered the principle by observation and experiments," notwithstanding it has cost him a considerable amount, of some details of which he favours us with particulars.—EDMUND TONKS.



ORCHID NOTES.

WOODLICE.

If left for only a short time these pests increase rapidly and soon do a great amount of damage both to the roots and young tender flower spikes. Where Orchid houses are infested with these pests every effort should be made to destroy them. Fortunately they do not give much trouble in the *Odontoglossum* house; it is too moist for them. In the *Cattleya* and East Indian house, however, they will increase astonishingly and are capable, during the period the plants are resting, of devouring nearly every good root the plants have made during the growing season. We have tried many methods of destroying these pests, but none is effectual that is not continuous. A considerable time must elapse before they can be exterminated when once they have been allowed to become numerous. The most effectual method we have tried is to cut Potatoes in half, scoop out the centres, and then place them on the surface of the soil and about the house. A few Potatoes cut up are useless where the insects are plentiful; a large number should be placed about, and it is surprising what a quantity of woodlice can be destroyed in a week. Do not crush them inside the traps, for we have found that others will not go under them freely afterwards. The best plan is to drop them into a pan or dish, where they can be instantly destroyed. This method takes much time, but it is certain to reduce their numbers, and if persisted in will result in clearing the house and the plants. It is necessary to look over the Potatoes at night and again in the morning. If done only once during the day the pests feed and then retire to their hiding places. It is important to supply fresh Potatoes when the others become hard and dry. With this plan we also place empty 6-inch pots filled with dry hay about the house containing portions of Potatoes. These form capital traps for woodlice, although we have never succeeded in catching so many by this means as by the use of half Potatoes that have been hollowed out.

ANTS.

Perhaps these are a greater nuisance to the Orchid grower than woodlice; not that they devour the roots on flower spikes to any serious extent as far as we have been able to observe, but they attack the buds and often destroy the flowers. The greatest harm they do, however, is in working the moss and peat into small particles, thus rendering the drainage defective, the soil, if abundance of water is needed, becoming sour and unsuitable for the plants. This is not all, for they persist in carrying the soil into the axils of the leaves and other portions of the plant. We have soaked plants for twenty-four hours in a tub of water, but only to clear them out temporarily, or some of them for a time. The method we find most effectual in trapping them and eventually destroying them is to place some sweet syrup into moderate sized bottles. Bottles half full of treacle or containing a little honey attract large numbers. Small pieces of wire are placed round the neck of the bottles so as to secure them close to the sides of the pots infested. The same mixture is placed fresh on small plants daily, the insects being plunged into boiling water. Very frequently the bottles become nearly full before we find it necessary to empty them. Once the insects are attracted to these simple traps they invariably find their way in large numbers in a very short time. Hollow bones are also attractive to these troublesome little pests. Time and patience only are necessary to clear them out.

COCKROACHES.

Whatever harm woodlice and ants are capable of doing cockroaches do more in much less time. A few of these will clear off every flower spike in one night, and devour the young growing roots of many plants, in addition to attacking the young growths and tender foliage of any plant they take a fancy to. Without question they are the most destructive pests that the Orchid grower has to contend against, and do more harm in less time than all others combined. Where they exist in gardens they must be looked for frequently and destroyed by all possible means. Whatever trap may be set for them will not prove successful long, and therefore it is necessary to change the method of trapping them at intervals of a few days. Birkenhead's trap is a good one, but they will not enter it long. A little beer sweetened with sugar and placed in glazed jars sunk to the rim in the gravel or ashes on which the plants stand will prove very effectual at first. Small pieces of bread placed in similar jars will also attract them. Phosphor paste will poison them, and may be laid on pieces of cardboard, brown paper, slate, or any material, or spread thickly on thin pieces of bread. For a time they will eat this freely, but quickly refuse to be tempted after it has been placed down a few nights in succession. It is a good plan to watch for them with a light at night, when they can readily be captured.—ORCHID GROWER.

LEAVES IN ORCHID HOUSES.

IN the Orchid houses under my charge we have the floors formed into pits for holding leaves, which we find very useful for this purpose. Decaying leaves appear to be just the food for Cattleyas, and far better than stone, and which the floors of Orchid houses are generally formed of. When leaves are used there is always a genial humidity in the atmosphere.—A. Y.

LÆLIA BOOTHIANA.

Of this species, which is also known as *Cattleya lobata*, *Lælia virens*, and *L. grandis purpurea*, there are not many varieties; one, however, whilst being a vigorous-growing plant does not yield an abundance of flowers, but there is little or no difference in the quality of the blooms. Pseudo-bulbs clavate, slender at the base, but thickening upwards rapidly, furrowed and deep green; leaves solitary, oblong, obtuse, same colour as the pseudo-bulbs; scape terminal, erect, three to five flowered; sepals lanceolate, acuminate, with plain margins, rosy-purple tinged with violet; petals much broader than the sepals, oblong lanceolate, deeply and irregularly lobed, same colour as the sepals; lip three-lobed, side lobes incurved, covering the column deeply lobed, middle lobe spreading, also deeply lobed on the margin, colour rosy-purple, tinged with violet, and conspicuously marked in front with purplish crimson lines. It blooms in May and June, and is a native of Brazil, whence it was introduced in 1847.—G. T.

• DWARF BEANS.

THESE do remarkably well on ridges. I used to grow them in the ordinary way, but the contemplation of results from the level never filled me with that mingled sense of delight and importance which some call satisfaction, others conceit. However, a few years ago scarcity of space at planting time compelled me to adopt a different method—viz., planting between the Celery trenches, the making of which was delayed until the first week in May, then the distances being marked out a line was drawn midway between the

intended trenches, and the Beans sown on the bare surface, taking out and disposing of the soil as usual covered them sufficiently. I was rather diffident of success, especially as ours is a very light soil on gravel, but whatever the reason—would it be additional warmth at the roots?—dwarf Beans that year were a source of pride, profit, and pleasure. Economy of ground and labour, a prolonged crop, and better pods are obvious points, and the Beans are cleared off before much soil is required for earthing the Celery.—S. Y.

CENTAUREA MACROCEPHALA.

SOME of the *Centaureas* are common occupants of gardens, such as the silvery foliaged *C. ragusina* and the numerous varieties of the Cornflower, *C. cyanus*, but there are others that are seldom seen though we'll



FIG. 28.—CENTAUREA MACROCEPHALA.

worthy of a place in any border. The plant, of which a flower head is represented in fig. 28, is a bold and effective *Centaurea* in suitable positions. It is sometimes designated a coarse plant, but that is not worth much consideration, for it applies equally to scores of other excellent plants. It attains the height of 5 feet in good soil, and bears large globular golden flower heads, that look well rising above other plants in the foreground. There are no special difficulties in its culture, as almost any soil suits it, but it is a strong rooting plant, and in consequence thrives in a deep well dug border. It is increased by division or seeds.—M.

[The woodcut was prepared from a specimen grown in Mr. T. S. Ware's nursery, Tottenham.]

SHADING AND SYRINGING MELONS.

IT is the practice of some gardeners to shade Melons during the hottest part of the day, and not only do I think this quite unnecessary

but even syringing as it is commonly practised is an evil. We never shade, however hot the day, or syringe beyond a slight dewing over at closing time on a hot day for about a fortnight after planting. We never have a scalded leaf or even red spider or thrips, and the foliage keeps quite a dark healthy green up to the time the fruit is cut. The Melon houses are never above 70° at night, with a little ventilation continually. We also ventilate more freely during the day than most gardeners, even opening the front lights to a considerable extent. This treatment causes a strong and sturdy growth from the first, able to withstand the hottest sun, and keep insects away. The soil cannot be made too firm at planting time, however heavy its nature, and animal manure should be avoided. We use heavy calcareous loam, with a sprinkling of fine bone flour and charcoal. Loose soil causes a sappy growth, and when the house is kept over-hot and close the growth is weak, and collapses with bright sun. To have good flavoured Melons healthy foliage is necessary, so means must be taken to meet this end. Over-syringing is probably the cause of scalded leaves. To those who are in the habit of syringing at night and morning the above remarks may appear strange, but they are nevertheless true. The Melon houses here are very light lean-to's, well exposed to the south sun, being on an incline; so during hot days they are very hot indeed. Melons appear to revel in sun.—A. YOUNG, *Abberley*.

BULBS IN GRASS.

PLANTING bulbs annually in the grass and under trees on lawns has its disadvantages, requiring much more time than many can afford; neither are the results so satisfactory as in the case of planting the bulbs where they can remain some time. In this manner the quantity of bloom obtainable is far in advance of that procured from those which are disturbed twice a year. Bulbs in the grass, where the varieties are numerous, give an excellent lasting effect, and it is a form of garden decoration at a dull time of the year outside, which is much to be recommended. Everybody cannot devote a piece of grass to this purpose, but where such a plan is practicable the results are greatly appreciated. The one point of most importance in successful bulb culture is allowing the bulbs to grow thoroughly after flowering, the foliage to develop to its fullest extent and ripen before the grass is cut. Such a bulb garden, as I will call it, affords an excellent site for the disposal of the bulbs of various kinds which have been forced and flowered inside the conservatory or dwelling house. It often happens that a difficulty arises after the bulbs have flowered as to what to do with them. Some find their way to the rubbish heap as worthless for future development after being once forced into flower. Such a garden as that suggested is just the place for these forced Dutch bulbs, as they will flower every year after being properly planted, and will afford much pleasure. In this manner a succession of flowers can be obtained lasting for a long time, several months in fact, if a selection be employed which has the necessary range of flowering.

Commencing with Snowdrops, we have *Galanthus nivalis*, double and single, and *G. Elwesii*, a giant among Snowdrops, with bold glaucous grey leaves and handsome flowers. These begin to flower about the middle of February, and are succeeded by Crocuses of various colours during March and the early part of April, according to the position and state of the weather. We have had some thousands planted of the large yellow, white, and purple selfs in a disused orchard, about 2 acres in extent. The trees were removed about ten years since as being useless. The piece of ground is long and narrow, and bordered nearly all around by tall deciduous trees, such as Oaks, Elms, Limes, and Chestnuts, somewhat protected in consequence from the worst winds, which would tend to spoil the appearance of the flowers when expanded. On this grass we have planted several Conifers, Rhododendrons, and deciduous flowering shrubs, that add to the attractions in their proper season of flowering, which is extended into the autumn by the use of *Tritomas*, *Bocconia cordata*, and *Pampas Grass*. In no form whatever does the Flame Flower (*Tritomas*) show to such good effect, the colour of the grass lending a capital contrast to the brightly coloured flower heads, and the season is prolonged by planting *T. glaucescens* and *T. Uvaria*, the former flowering fully a month earlier than the latter. The method we adopt in planting the Crocus, Snowdrops, and Tulips is as follows. In October we make holes in the grass with an iron bar rather blunt at the end; at the bottom of the hole we drop a handful of fine sandy soil; the bulb rests on this soil, which assists the formation of roots more quickly than would be the case in the ordinary soil, which is retentive, and in some places of a stony character. The hole is then filled with the soil, the bulbs being about 3 inches deep when planted. Aconites we have tried, but they have not been a success by reason of the thick covering of moss which grows in that part of the ground where these were planted, through this reason the plants are simply spoiled. It not being practicable to remove the moss we shall have to be content to let the Aconites

struggle on in their position. The Crocuses, I ought to say, are planted in patches of distinct colours, in some places about 6 feet square. This arrangement is preferred to mixing them indiscriminately, although some are so planted. It is surprising how quickly the single bulbs of Crocuses increase; the second year as many as eight blooms are produced from one bulb planted the year before. When the sun is shining brightly the blooms of Crocuses expand; in this manner the effect is very pleasing, and should be seen to be appreciated. Amongst the Crocuses are planted many roots of coloured Primroses, which begin to flower before the former fade, and are very pretty in the grass. In the grass there are numbers of Lenten Lilies in patches some 10 feet square. Double Daffodils are planted in clumps, some thousands there are now, patches of this bulb having been there for over twenty years. The effect of the orange yellow masses when fully in flower can easily be imagined. These are succeeded by a pale yellow Narcissus, which now occupies spaces 4 feet across.

For some years we have made a practice of planting the forced bulbs from pots after flowering in the grass amongst the other bulbs. Turning them out of the pots without removing the soil, they are planted, first removing the turf and some soil, then making a hole large enough to admit the ball of soil and roots intact. The soil being good assists the growth of the bulbs for some years. The grass is then rolled back, only allowing space for the stem and leaves. The forced bulbs which are planted in this manner are Hyacinths. Double and single Tulips, Jonquils, and Polyanthus Narcissus, all flower freely every year. To give a greater variety we last season planted Parrot Tulips, and there is a goodly number of the tall old-fashioned striped garden Tulip, which flowers the last of the bulbous plants, and having tall flower stems they are just right for that time of year when the grass is growing above the height of the ordinary bedding Tulips. The grass is allowed to grow until the early part of July, by that time the bulbs will be ripe and the foliage ready for removal. A crop of hay is then had from the grass, which is kept short for the remainder of the year. Some time in November the grass is mown short, the leaves are raked off, so that no trampling is necessary among the bulbs at the time when new growth may be expected early in the year. On the grass are planted Rhododendrons of various colours, red predominating. These and some Conifers give variety during the winter, and the former give highly coloured flowers in May and June.—E. MOLYNEUX.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 48.)

FRENCH horticulture made remarkable progress after the middle of the seventeenth century; this was due partly to the encouragement it received from Louis XIV., and partly to the labours of the famous Jean de Quintinye. When a youth he travelled in Italy and other countries, returning to France with a mind stored with the results of observation, and the remainder of his life was devoted to horticulture and botany. Amongst the other improvements he introduced was an excellent system of pruning fruit trees, for previously the methods used seem to have been somewhat barbarous; he also advocated the placing of Vines and various trees upon walls, a practice till then scarcely known. He pointed out the necessity of protecting at night during certain seasons plants that had been exposed to the sunshine by day, and many valuable hints are offered to the gardeners of his time in his works, one of which, "The Complete Gardener," was translated by our Evelyn, and again by London and Wise. It was a natural consequence of the Restoration, when Charles II. and his courtiers quitted the land which had given shelter to many English refugees, that they should bring home a taste for French fashions generally, and for French modes of gardening in particular. Hence the influence of the sister land is very traceable, and probably in the whole beneficial during this reign and the next, till the arrival of "Dutch William" brought about a change, and the Netherlands, from which England had learned so much in the Tudor times, became again our instructors in new arts of gardening.

The closing Stuart period of our history was not, indeed, distinguished by its peacefulness, but the cessation of civil war gave encouragement both to agriculture and gardening, pursuits which cannot flourish when domestic turmoils make it doubtful whether he who sows or plants will see the result of his labours. Not a few of the little hills north of London were thickly studded before the Civil War with the gardens of merchants and citizens, and near the Thames (for convenience of transit) were some other gardens in which the pioneers of modern market gardening raised vegetables for the market; but these all suffered from extemporised fortifications and the marching of troops. Hence it really was not till after the Restoration that the trade of florist, or that of market

gardener, occupied a distinctive place as callings; there was, indeed, of older date a guild of gardeners. The members of it, however, were mostly gardeners to some nobleman or citizen, or else were amateurs. The law, too, of supply and demand made men reluctant to raise articles of a perishable nature the sale of which was doubtful, until the growing prosperity of the nation led many to seek articles previously regarded as luxuries.

John Rea, who writes himself a gentleman (as every gardener is, or might be, and I was pleased to read some statistics lately showing how rarely gardeners are guilty of any crime), appears to have been one of the first professional gardeners. He published about 1665 a folio book, now scarce, explanatory of the art of planning ornamental gardens and pleasure grounds. But the great man of this period was John Evelyn, of whom Switzer wrote, with all a young man's enthusiasm for one who was old in the craft, that after the calamities of England were over "he reanimated the spirit of his countrymen for the planting of woods, and made gardening speak proper English." As a young man of twenty-four he travelled on the Continent while Charles I. was king, and in his journal he notes that he made careful examination of twenty-six gardens in France and Italy. From his observations there and elsewhere he was led to form theories which on his return to England he put into practice, and tried to persuade his countrymen to do likewise. While Cromwell was Protector Evelyn wrote his "Gardener's Calender," an able work, though only a fragment of an encyclopædia which he had planned but did not complete. But his grand performance was the famous "Sylva," of interest to the gardener as well as to the forester. This was published in 1664, and about 1000 copies sold in two years—a remarkable event. Evelyn was also able to state that, within a few years after its appearance many millions of trees were sown or planted as a result, and, as a minor consequence, more and better cider was made; this subject being treated in "Sylva." Another book of his, which was somewhat significant, was his "Fumifugium," designed to show that the "inconvenience of the air and the smoke of London" might be removed. How gladly should we greet a modern Evelyn who would tell us a plan to deliver London from its murky fogs! The scheme proposed in the reign of Charles II. was not a bad one for the time—viz., the removal of all factories or furnaces six miles out of London, and also the planting of groves and shrubberies in vacant spots. We are, however, working on his line in the movement by which hundreds of open spaces about the metropolis have been made bright with flowers and greenery during the last seven years.

The estate attached to Sayes Court at Deptford, of 260 acres, gave Evelyn the opportunity of planting largely, and there, remarks Lord Guildford, he illustrated his book on trees, for he spared no pains to obtain every species attainable, both useful and ornamental. English hedges, till then, had chiefly been made of Hawthorn; but the conduct of Czar Peter, to whom for a time Evelyn unwisely let his mansion, showed Evelyn that it would be an advantage to enclose gardens with hedges, through which barrows could not be wheeled, and he advised the use of Holly or Yew. One of his Holly hedges was long famous on account of its length, breadth, and from a mention of Phillyreas, in a MS. regarding damages done to plants at Sayes Court by the careless Czar, it may be concluded this species was one of Evelyn's favourites. The arrangement of fruit trees upon walls, built circle within circle, was a new fashion followed by Evelyn and others, supposed to be advantageous then, now out of date; but specimens of these walls remain. Pepys, in his Diary, notes down in July, 1666, that he considered flowers were better grown in plots than in borders, because the latter are likely to be trod over by strollers along garden walks. He also notes what he had perhaps heard from Evelyn, that English garden walks were at that time unrivalled, even by France or Italy.

Under date of June 10th, 1658, Evelyn records a visit to a garden in Westminster containing exotic plants, collected by one Morgan, a botanist. This is supposed to have been the establishment referred to in the early annals of the Apothecaries Company, as having given the start to their Physic Garden at Chelsea, which was the means subsequently of bringing to England a very large number of rare plants. Some of the best private gardens of this reign were on the north or east of London; thus, on the way to Hampstead there was Belsize House, with groves and gardens, and a house containing fine Orange and Lemon trees, the seat of Lord Wootton. At Hackney a much-admired garden was owned by Lord Brooke, and Sir O. Cook had a garden there containing two greenhouses when Pepys went to the place, and he saw that the roof of one of these having been made a receptacle for water it gave way, being overweighted, destroying many of the plants. This little anecdote is interesting, as proving that the greenhouses of that time had neither glazed nor sloped roofs usually. Gourle was a well-known gardener at Hoxton, who was probably a raiser of varieties, for he produced a Nectarine, to which he gave the

name of Elrouge, by transposing the letters of his own name. Then Loader, a maker of anchors, had in Greenwich an extensive garden, with terraces and an orangery. Inigo Jones, who had already distinguished himself in other ways, is said to have occupied his time during part of the reign of Charles II. in planning or executing decorative garden buildings. This monarch made overtures to several French gardeners of distinction, and one of these—Le Nôtre, who had laid out Versailles and other celebrated gardens—came over to England. Under his direction Greenwich and St. James's Parks were planted, and it is supposed that he may have helped to plan the gardens at Chatsworth and Ham House, possibly suggesting changes at Hampton Court, which were somewhat altered about this time. One of the peculiarities of the period was the occasional planting of lines of Reeds, placed in a narrow streamlet, to protect choice plants from high winds.—J. R. S. C.

GLOXINIAS.

THE idea prevails with many that a strong heat is necessary for Gloxinias, and that their sole acceptable home is the stove. That may be so where large leaves are the object, but where the convenience exists, and those in charge are not ambitious to excel in size of foliage, a fine display of flowers may be had in a late vinery during July, August, and September, provided the growths overhead are so thinly trained as to admit plenty of light. In many instances the roots are brought on successively, and this is a useful practice as regards cutting; but for decoration a plant here and there a yard apart is entirely lost; they must be seen in a mass to be fully appreciated. The flowers being choice and exceptionally showy, a stage containing 100 or more plants in flower, relieved by several small elegant Palms, is a feast of colour not soon forgotten.

Started in boxes in April they adapt themselves to circumstances quite comfortably, taking up little room, while the houses are filled with bedding plants, and when relief comes they are ready for potting and the space left vacant. Houses that would otherwise be empty or dull can thus be rendered brilliant and pleasing. It is useless, however, attempting to grow Gloxinias well, or, in fact, anything else, under Vines that are cultivated (?) on the go-as-you-please principle.—S. Y.



THE FIRST SHOW OF THE SEASON.

CHRYSANTHEMUM growers are already beginning to look with greater interest at their plants in preparation for the November exhibitions, and in the meantime the National Society's Exhibition of early varieties, which takes place at the Westminster Aquarium on Wednesday and Thursday, September 11th and 12th, may be considered as the commencement of the Show season. Useful as the early Chrysanthemums undoubtedly are, it cannot be expected that they will ever attain the popularity of the November varieties for Show purposes. Still they are well worth encouragement, and the classes provided for them form an agreeable feature.

In the schedule issued by the Society named nine classes are devoted to the early Chrysanthemums, the prizes ranging from £5 to 5s. They are as follows:—Group of Chrysanthemums, any varieties, arranged in a space not exceeding 60 square feet, quality and general effect to be the leading features; collection cut Chrysanthemums (any varieties and in bunches), quality and number of varieties to be the leading features; twelve blooms, Madame C. Desgrange; twelve blooms, any varieties except Madame C. Desgrange; twelve Pompons, three flowers of each, to be shown in bunches with foliage; six bunches Madame C. Desgrange, three blooms in each, with foliage; six bunches any of the yellow varieties of Madame C. Desgrange, three blooms in each, with foliage; six bunches any varieties except Madame C. Desgrange, three blooms in each, with foliage. Amateur class, for those who do not employ paid assistance of any kind in the culture of Chrysanthemums.—Twelve bunches Chrysanthemums (Pompons allowed), three blooms in each, with foliage. In addition to these sixteen classes are devoted to Dahlias in the different sections, and there is one for a collection of Gladioli spikes.

A Conference of cultivators and others interested in the Chrysanthemum will be held on September 11th in conjunction with the Exhibition above named, and the programme prepared by the Sub-Committee appointed to carry out the arrangements includes a paper by Mr. W. Piercy of Forest Hill on "Early Flowering Chrysanthemums,"

and a paper by Mr. J. Doughty of Angley Park on the "Treatment of Plants (Grown for the Production of Exhibition Blooms) a Short Time Previous to the Shows." The chair will be taken at 4 P.M. Mr. Piercy is a well known authority on the subject about which he intends to discourse, and something of interest and utility may be expected. Mr. Doughty is the "Champion of Kent," and is sure to contribute some remarks of practical value.

The Hon. Secretary, Mr. Holmes, will no doubt be in town for the opening of the National's session, and I hear he is on his way from the Green Isle, where he has been exploring the Killarney region in search of beautiful scenery and health, both which it is to be hoped he found. He writes concerning Dublin:—"They have a superb lot of Chrysanthemums in the Dublin Botanic Gardens—I think the finest lot of plants I ever saw; and what a house of Todeas they have, and enough Killarney Fern to stock the world, certainly £1000 worth."—C.

IN THE MIDLANDS.

A GREAT deal of what is interesting may be seen during a few days' sojourn in the beautiful and fertile county of Worcester and over its boundary into Staffordshire. Obviously only a comparatively small number of the readers of this Journal who are identified with horticulture or agriculture can inspect what they would desire, and therefore must be content to "see with other eyes" something of what is presented to view in great trade establishments and good private gardens. Two of the former and three of the latter having afforded much pleasure to the writer during a three-days ramble and a Sunday's rest, he will endeavour to give an idea of what was brought within the field of vision in the quick "rush through" the places that will be briefly referred to. It was convenient to visit the most distant first and work homewards. Therefore in that order they will be of necessity very imperfectly described.

STOURBRIDGE, WORDSLEY, AND KINVER.

The mention of those names will sufficiently indicate that the great and successful trade undertakings of Messrs. Webb & Sons are to be brought under review. Stourbridge appears to be a thriving town of 10,000 or 12,000 inhabitants. If a stranger find his way to the Talbot Hotel, and asks if anything is known of a "firm of the name of Webb," he will, though receiving a very civil reply, be probably regarded as something of an ignoramus. To the officials and frequenters of this good hostelry the Messrs. Webb are decidedly men of rank. One will tell you they are magistrates, another that they are leading property holders, a third that they are great Hop, wool, and manure merchants, a fourth that they are the "biggest seedsmen in the world," as well as being largely interested in the manufacture of glass. The finest of glass is made and cut in Stourbridge. It has long been the chief seat of the industry, and the highest prizes at the Paris Exhibition for the manufacture of articles from "tumblers" to epergnes and candelabras, with everything else between, were awarded to produce from the town. So much, then, for Stourbridge and the family that is evidently held in much esteem there, and we pass on to Wordsley to see what it is like, and to Kinver to see what is being done there.

Wordsley is a small village two or three miles from Stourbridge, and the head-quarters of Messrs. Webb's gigantic business, for by no other adjective can it be accurately characterised. Apart from this business the village would rest in obscurity; with its name is familiar to the English-speaking race, or at least that important section of it which is identified with farming and gardening. The nation has reason to be proud of its great firms who have done so much in improving the varieties in cereal, roots, and other vegetable crops. In this commendable work Messrs. Webb & Sons share extensively, with great credit to themselves and satisfaction to thousands of home and colonial clients.

Having long enjoyed wide local fame amongst the agricultural community, Messrs. Webb a few years ago took steps to widen the scope of their operations as growers and purveyors of seeds, not for the farm alone, but for the garden. The innate business aptitude of the firm, their great resources, and the thoroughness of the action displayed is proverbial, with the result that they have achieved a commanding position in a very short time. The magnitude of their operations is abundantly evident at Wordsley. The great and substantial piles of buildings would not have been erected if not demanded. They are simple necessities of an expanding trade. It would be tedious to enumerate the different buildings and their dimensions. These, in fact, have been given on previous occasions, with one highly noteworthy exception—a recently completed warehouse, which was being photographed on the day of inspection. This structure is 120 by 50, and 75 feet high, with six floors. It is an addition to a previously large block, and the offices have also been enlarged. The different buildings appear to be replete with machinery and every other requisite, and in one of them the packing of bulbs of various kinds was going briskly on.

Kinver is four or five miles from Stourbridge, the drive being a particularly agreeable one on a bright clear day. The district is boldly undulated and richly wooded, the fine trees and full field crops testifying to the fertility of the soil. After passing through the village of Kinver the ascent becomes somewhat steep, the immediate approach to the farms being decidedly picturesque, the road passing through a gorge flanked by rugged rocks, and the overhanging trees afforded grateful shade on the hottest harvest day of the year. On reaching the comfortable farm residence the view over the farms to the bold Kinver edge on

one hand and horizon on the other is very delightful, the altitude rendering the air pure and bracing. This, with soil of excellent staple, and charged with fertility of the right kind for crops, imparts to flowers unusual brightness of colour, and to grain the density that growers and sowers like to see and to feel. There can be no question that these farms are admirably adapted to the purpose to which they are devoted. They embrace, with a recent addition, nearly 2000 acres, a great part being the freehold of the firm which cultivates them so well.

A considerable extent of ground is devoted to experimental crops and stock testing purposes. All the varieties of popular flowers and vegetables of repute are grown for comparison, and for displaying their character and testing their purity. It is the same with farm crops—pasture, forage, roots, and grain. It is the simple truth to say there appeared to be no blanks or failures; no mildew, insects, or grub-infested roots. A pleasing feature in connection with these comparative trials is the ready recognition of the merits of samples, come from whence they may. Messrs. Webb appear to be in the fullest sense fair competitors in the seed-raising world. They have a high aim, and seek for excellence in varieties perseveringly.

Very gay was the great garden of flowers, each kind in its separate square, massive Stocks and Asters, brilliant Zinnias, rich Marigolds, and so on through all the half-hardy section. The chief hardy annuals were similarly displayed, but some of these were naturally fading. One of these was the Sterling Poppy, though the remnant showed how gorgeous the mass must have been. This strain has been obtained by intercrossing the Danebrog, umbrosum, and other varieties with the large P. somniferum, and combines stateliness of growth with remarkable diversity in colours. Masses of Tropæolums and glowing glossy crimson Linums had a dazzling effect in the bright sunshine, and the eye sought relief in the softer yet charming Nemophilas and other flowers of cooler tints. The best repose, however, was provided by parallel beds of Grasses for lawns and farms, kept "down" to show their character in field or garden. The various kinds are grown separately, and their differences are apparent and can be perceived at a glance. These sample plots are both interesting and instructive.

Adjoining are the sample plots of vegetable crops, a few rows of the different varieties of the several kinds being grown for comparison—Carrots, Turnips, Onions, Beet, Cabbages, Kales, Savoy, Beans, Peas—everything, the whole forming a museum of useful vegetation. Neither time nor space permits an enumeration, much less a description of those grown, nor is it necessary to make the attempt, for the most noteworthy and generally satisfactory are with great accuracy described in the well-prepared catalogues of the firm. The crossing of vegetables is pursued systematically with the object of obtaining superior varieties.

Peas alone are a study at Kinver, new forms are almost bewildering, and it is no light task selecting and "fixing" the most worthy. Few persons are aware of the time that must be spent, and the discrimination exercised in establishing a new Pea that shall retain all the desired characters. A good cross can be effected between varieties in the hope of blending the best properties of both. Double crosses are obtained in each case. For instance, if Ne Plus Ultra is crossed with Wordsley Wonder, this is crossed with the former at the same time. The result of this may be that every pea in the two pods when sown will in some points display the union, yet some of the plants be tall, others dwarf, some may have more or less curved and pointed pods, others being straighter and square ended. One may be enormously productive yet defective in quality; another may be superior in quality, but not free enough in producing. The work of selection, then, when a number of crosses are effected, may be imagined. Not in one year, nor two, nor three, can the work be exhausted. But a few varieties can, perhaps, be fixed every year out of dozens that must be excluded, and others retained for further trial. It is useless in these days sending out varieties simply because they are "new." The selection must be most rigid, and some courage exercised in the casting out process. A combination of good qualities can alone satisfy the public and bring credit to and beget confidence in the raisers. Messrs. Webb are fully alive to this, and work to an ideal standard. When according to their judgment this is attained, and not till then, a stock is raised for distribution. This also involves time, experience having proved that this stock must be a large one, or inability to supply applicants ensues, thus leading to disappointment all round. Of some varieties the supply is already considerable, but when they will be distributed, and what they will be called, are questions for the firm to determine. Others still scarce will follow, for there are, without doubt, several distinct and meritorious varieties amongst the Wordsley creations which the public will have the opportunity of testing when the time comes.

Potatoes are also raised in great numbers by cross fertilisation, and the work of selecting and sorting, excluding and retaining, is an important part of established routine. Success in the past encourages the firm to persevere in this work. They find it necessary to reject sternly, select carefully, try well, then to grow largely of those which possess the desired qualities. They consider Stourbridge Glory one of their great "hits," over which they made a great mistake in placing it in commerce too soon, with the unpleasant result of not being able to meet the demand. Though raised from Woodstock Kidney the plants are more vigorous than Magnum Bonum, and withstand weather vicissitudes better than most others, the leaves remaining green while those surrounding were more or less blackened by the cold and wet a few weeks ago. When tried the crop was exceptionally heavy, and large growers of Potatoes for market have found out the usefulness of the variety in question. There was no time to examine the different stocks that were

being grown for seed purposes. Some of the variety Renown were, however, taken from the ground, as this is the favourite Potato of the senior partner of the firm. Evidently he is no bad judge. It is not possible to imagine tubers rounder, and they are also of large uniform size, with rough skins, and the eyes set in the faintest possible depressions, so that there can be scarcely any waste in paring. It is a second early, said to be ready for use as soon as the leaves wither, and to retain its excellent cooking quality throughout the winter.

So far we are only on the fringe of the operations at Kinver. There is the great beyond devoted to trials of farm roots and grain crops, trials of manures on different crops, small plots on which cross-fertilisation is conducted with cereals and various root-producing plants, and hundreds of broad acres in which stock seed is grown of special varieties for raising seed elsewhere to meet the yearly demand. The grain harvest was being gathered in under the most favourable circumstances, and was, in fact, nearly completed. In a new Dutch barn Webb's Chevalier Barley was being rapidly stored with the aid of an elevator, the estimate of the yield in this one building being 4000 bushels. This is the variety which they point out with pardonable pride won the champion cup on two consecutive years at the Brewers' Exhibition. That is sufficient evidence of quality. The special stocks of other kinds of grain were also being secured in the best and brightest of condition, and the crops were splendid. As to the varieties, any person desiring to do so can find all particulars about them, and everything else in the way of grain, cereal, and root crops in the different catalogues of the firm; and a perusal of these works, one of which appears to be devoted to each section of the business, will show conclusively the utter impracticability, not to say impossibility, of doing more in an article than give a general idea of the operations at Kinver.

The full crops may probably to a great extent be accounted for by the judicious use of chemical manures, of which Messrs. Webb are great manufacturers, and they are not the people to offer to others what they do not find good for themselves. There were Mangolds not far short of a yard round in August, and field Cabbages nearly a yard across. This is no exaggeration, and the specimens will no doubt be in evidence at their seed and root stands at forthcoming exhibitions. Kinver is an out-of-the-way place no doubt, but worth a long journey to see when the grain crops are ready for reaping, root crops covering the ground with luxuriant growth, vegetables thriving in interesting variety, and flowers imparting beauty to the scene.



EVENTS OF THE WEEK.—The present will be a somewhat busy week for metropolitan horticulturists, and both fruit, Dahlia, and Chrysanthemum growers will have a chance of showing their skill. To-day (Thursday) the Floral Committee of the Royal Horticultural Society will meet at Chiswick at 2 P.M. On Friday the Fruit and Dahlia Shows at the Crystal Palace, Sydenham, will be opened, and extensive displays are expected in both departments. These Shows also continue on the following day, Saturday. The National Chrysanthemum Society's early Show (noted on page 199) will be held at the Royal Aquarium, Westminster, on September 11th and 12th, the Floral Committee of that Society meeting on the first of the two days named at 12.30 P.M. The Brighton Show will be held on the same days.

GOLD MEDAL FRUIT ESSAY.—We are requested to announce that the prize of twenty-five guineas offered by the Fruiterers' Company for an essay on profitable fruit-growing for cottagers and others with small holdings, and the gold medal offered by Dr. Hogg to the winner in the competition, have been awarded to Mr. J. Wright of 36, Alma Road, Wandsworth. Advertisements of the competition appeared in the issues of this paper of April and May last. The following is the report of the adjudicators:—

"Having carefully examined the fourteen essays submitted, we have unanimously selected that signed 'British Workman' for the award of the prize. This essay combines practical knowledge with literary ability, and complies with the conditions of the competition. A considerable proportion of the fourteen essays deserve commendation, and it is a matter of regret to us that we have only one prize at our command, where perhaps three or four might be worthily awarded. We would mention those signed 'Pomona,' 'Progression,' 'Jabez Chawley,' and 'Hope On' as particularly meritorious, although not meeting with our entire approval in connection with the present reference.

"T. FRANCIS RIVERS,
"A. F. BARRON,
"SHIRLEY HIBBERD.

August 26th, 1889."

GARDENERS' ORPHAN FUND.—We are pleased to learn, through Mr. Wildsmith, that on the occasion of the public opening of the famed gardens and grounds of Heckfield Place on August 24th and 26th, by the kindness of Lady Emma Shaw-Lefevre, the sum of £6 10s. was realised for this excellent charity. Greater numbers of visitors would doubtless have been present, but the weather was very unfavourable on the first day.

SHREWSBURY SHOW.—In the report of this Show last week our representative inadvertently omitted to say that Messrs. Richard Smith & Co., nurserymen, Worcester, exhibited, not for competition, a miscellaneous group of stove and greenhouse plants, including choice Crotons, Dracenas, Palms, Ericas, and other variegated plants, together with about three dozen Lilies in variety full of flower, the whole of which were a great attraction and much admired. The same firm also exhibited a good collection of variegated and ornamental foliaged trees for giving effect in park planting, for which they were deservedly awarded a certificate of merit.

MR. F. T. SMITH, 19, Martell Road, West Dulwich, has submitted a collection of HOLLYHOCK BLOOMS to our inspection, gathered from about 3000 plants of 100 varieties. The blooms were of medium size, but good in shape and varied in colour, some very soft and brilliant shades being represented. He states that his plants are quite free from disease, and have not during the past seven years been affected by it in the slightest degree. Seedlings are relied upon for increasing the stock, the varieties being grown separately and the seed carefully collected, so that a large per-centage of the seedlings come true to their colours. It is quite refreshing to see Hollyhocks again in something approaching to show condition, and there is no doubt that the system of continuous propagation by cuttings has had much to do with weakening the constitution of the named varieties.

PRESERVING GOURDS.—Can any reader of the Journal inform me how Gourds are preserved without cutting them open? We want them preserved in the same way that the Japanese people treat them.—J. T., Walton.

GLADIOLI AT PARIS.—We are requested to state that Messrs. Kelway & Son, Langport, Somerset, have been awarded the premier prize at the last Flower Show (August 16th to 21st) of the Paris Exhibition, held in the Trocadero Palace Gardens, for a collection of about 150 spikes of Gladioli.

The same firm sends us a spike of GLADIOLUS LEONARD KELWAY, said to be derived from a cross between G. purpurco-auratus and G. gandavensis. The flowers are of good size and shape, and remarkable for their extremely deep crimson colour, having quite a distinct tinge of purple. The spike is of moderate size, but the colour will please many who are not exhibitors.

PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—The twenty-third monthly reading (first of the present season) is in connection with the above Society will be given in the large room of the Castle Hotel, Market Place, Preston, on Saturday evening, September 7th, when Mr. W. P. Roberts of The Gardens, Cuerden Hall, will read his paper on "The Mignonette and its Culture." The chair will be taken by the President at 7.30 prompt.

GARDENING APPOINTMENTS.—Mr. Joseph Maddocks, late gardener to B. C. Roberts, Esq., J.P., Oakfield, Chester, has been appointed gardener to Lady Alice Ewing, Coed Derwen, Bettws-y-coed, North Wales. Mr. Thos. Dennes, for the last two and a half years foreman at Worksop Manor, Notts, has received the appointment as head gardener to Mrs. Cookson, Binfield Park, Bracknell, Berks.

COCKSCOMBS AND CELOSIAS AT ABBERLEY.—In the above gardens is a splendid display of these plants. The Cockscombs are large and of a vivid crimson colour. The Celosias are also a fine strain, being of the true pyramidal form. The plants range about 4 feet in height and 3 feet in diameter at the base. These plants are excellent for conservatory decoration, and the wonder is that they are not more largely grown.

THE RAINFALL AT CUCKFIELD, SUSSEX, for the past month was 3.42 inches, being 1.24 inch above the average of nine years. The heaviest fall was 0.63 on the 11th, rain falling on fifteen days. The highest (not strictly shade temperature) was 87° on the 30th and 31st, and the lowest 41° on the 25th. Mean day temperature, 74.3°; mean night temperature, 49.2°; mean temperature, 61.7°, being 2° below the average of seven years.—R. INGLIS.

— **YORK FLOWER SHOW AND GALA.**—The abstract of the Treasurer's account in connection with the York Flower Show and Gala, held last June, was presented at a meeting of the Committee held at the North-Eastern Hotel, York, on August 30th. The document showed that the Exhibition had resulted in gate receipts amounting to £1456, against £1215 in 1888, and that the total income for the year had been £1888. The expenditure had amounted to £1723, leaving a profit on the year of £164. On profit and loss account this balance was reduced to £64, and of this amount it was resolved that the following sums be given to local charities:—£40 to the York County Hospital, £10 to the York Dispensary, and £10 to the York Lunatic Asylum. A number of votes of thanks were also passed.

— **"A. C. W."** (page 175) depreciates the knowledge of gardeners and people in general with regard to **EDIBLE FUNGI**. He is loud in his praise of the Mushroom, which the people north of the Tweed are not able to distinguish from a puddock-stool. But of all these fifty funguses, which are so ignorantly passed by the Mushroom gatherer, he has not a word of praise for a single one of them. There are doubtless plenty of edible fungi besides the common Mushroom, but that they exist so plentifully as your correspondent would lead us to believe few, I think, will agree to. His suggestion about coloured plates I would take to be more imaginary than practical. At any rate, I for one would not like to stake the results of eating an unknown fungus merely from such a description. I am afraid your correspondent after all belongs to the majority.—D. G. B.

— **PELARGONIUM E. F. CROCKER.**—Those who are partial to the more refined tints in bedding-out arrangements should make a note of the above variety for such purposes where a bright and attractive but not gaudy piece of colouring is required. A sport from Master Christine, it contains all the good qualities of that popular variety with a decided advance in point of habit, and increased size and substance of its petals; but the chief and most pleasing charm of this fine variety lies in the additional depth and brightness of the colouring of its flowers. These, borne on stout footstalks in medium-sized trusses with the same freedom as is common in the older type of Christine, present a concentrated tone of colour of at least treble that of its parent, with a pleasing dash of red in its composition which lends a peculiar bright and rich character to the original lovely hue, that is the predominating feature of the Christine type.—M. C.

— I AM disposed to think the **APPLE CROP** is not the general failure at first anticipated. Recently I have been through several country districts, and was agreeably surprised to see so many Apples on trees in farm and cottagers' gardens. I also noticed numerous trees in a few orchards that seem to be very well stocked with fruit. In some instances the varieties are of little value other than for cider making, but there will yet be a considerable weight of fruit suitable for the markets. It is a curious fact that the best crops are on trees growing in low positions, or where they more often fail than not. I also found on making inquiries that most of the trees bearing good crops this season carried few or no fruit last year. They did not flower nearly so abundantly as many that failed to set any fruit, and in all probability the flowers were stronger and more perfect accordingly. Apples generally are growing out well, and fine clean fruit will be gathered.—W. I., *Somerset*.

— **APPLES ON PEAR TREES.**—What you say in this week's Journal (page 171) brings vividly to my mind "the days o' lang syne when a laddie." In the gardens at Dundas Castle, Linlithgowshire (which were made by my father in 1814-15 from plans by John Hay, a famous garden architect in those days), there was a horizontal trained Pear tree on a wall with an east aspect on the right side of the door going into the garden from the gardener's cottage, next the door was a *Calycanthus floridus* (the flowers of which were much esteemed by the Dundas family), then the Pear tree, every branch of which was grafted by my father with a different sort of Pear (early and late sorts), with the exception of two branches near the top of the tree on the left side, which were grafted with Apples and full of fruit in the years 1832-33. My father left Dundas Castle in 1834, so you will see by this that growing Apples on Pear trees is no new idea.—CHARLES ROSS, *Welford Park Gardens, Newbury*.

— **PRESENTATION TO MR. RABONE.**—On the occasion of the annual Horticultural Show at Alton Towers, August 29th, a pleasant incident in the day's proceedings was the presentation to Mr. Rabone, gardener to the Earl of Shrewsbury and Talbot, Alton Towers, of a handsome silver cup, accompanied by an illuminated address, to mark

the twenty-first year of his connection with the Society as Honorary Secretary. Mr. Wm. Brown, Elmdon Hall Gardens near Birmingham, one of the Judges, and an old friend of Mr. Rabone, was requested by the subscribers to make the presentation, and in doing so spoke of the testimonial being the spontaneous offering from friends who highly esteemed Mr. Rabone, and as some recognition of his unvarying courtesy and kindness to all with whom he was brought in contact, and to the tact he had always shown in a position of responsibility and difficulty. Mr. Rabone, in thanking his numerous friends the subscribers, and stated that "he mentioned with pride that during the twenty-one years he had been at Alton there had been upwards of 600,000 visitors to the Towers, and yet during that time no single complaint had been made against himself. He acknowledged the unvarying kindness which he had always received from the late and the present Lord Shrewsbury."

— **STAPELIA GIGANTEA.**—This, some *Rafflesias* and certain species of *Aristolochia*, are the largest-flowered members of the vegetable kingdom, and, what is curious, all are most fetid and have lurid colours. They agree in no other characters; they differ altogether in habit and botanical affinity; and they inhabit widely distant parts of the world—namely, South Africa, Malaya, and Brazil. The Giant *Stapelia* is a native of Zululand, where it was discovered by Mr. R. W. Plant, a collector, some thirty years ago, and sent by him to the Botanical Gardens of D'Urban, whence it was introduced into England by Mr. Cooper. It has also been collected by Gerrard, and there is a drawing of it in the Kew Herbarium, made by Mr. Sanderson of Natal, and specimens from the Umveloo River; and what is most curious, Mr. Brown informs me that he has received from Professor Macowan, of the Cape Town Botanical Gardens, a living specimen of the same species collected in Namaqua Land, on the opposite side of the African continent. In this respect it is exceptional, for the species of this genus for the most part occupy limited areas; in other words, are as a rule local. The figure represented was sent by Sir George MacLeay from his rich collection at Pendell Court, where it flowered in October of last year; and is a cutting from the original plant imported by Mr. Cooper. There is a specimen of it in the Royal Gardens, where it has not flowered as yet.—(*Botanical Magazine*, t. 7068.)

— **BANANA CULTURE IN THE WEST INDIES.**—The edible Banana, it is said, is known to seed only in one small spot on earth—the Andaman Islands. However this may be, it is universally grown from suckers. Its cultivation in the West Indies has vastly increased during the past fifteen years, owing to the demands of the United States for its cheap, wholesome, and luscious fruit. About 400 or 500 trees are planted to the acre, and the plantations are called "Banana walks." In former days any available spot was chosen, usually an abandoned cane field, where the ground was most easily prepared for the new crop. But experience and competition have brought about more careful methods of planting, and the best place for a Banana walk is now considered a valley or hillside with a western prospect. The trees fruit the first year, and the expense of cultivation is so small that a bunch of Bananas delivered at the sea coast need have cost its owner no more than four or five cents, while it may be sold in the winter months for from twelve or eighteen cents, and in the spring months for four times as much.—(*American Cultivator*).

FIGS IN POTS.

A CORRESPONDENT—"J. R."—desires some information on the cultivation of Figs in pots, and thinks he remembers something of the kind being treated upon in a paper read before the Royal Horticultural Society. He probably refers to the following, which was written by Mr. A. F. Barron, and read at one of the meetings some years ago. It contains the information he requires, and may probably also prove suggestive to others.

The following remarks are intended to apply chiefly to Fig trees grown in pots. There is no mode of culture which has so many advantages, and none for which the plant itself is so particularly well adapted. One great recommendation of pot culture is the immense variety that can be grown in a very small space, so that by a proper selection of varieties an almost continual supply may be obtained. The Fig bears more profusely in pots than when planted out, excepting in the case of large old trees. The Fig is a gross feeder, and when planted out it is difficult, especially while the plants are young, to restrict the action of the roots; and thus, instead of fruit, nothing but gross shoots are produced. Plants in pots, on the contrary, are perfectly under the control of the cultivator, and bear fruit abundantly. Further, the fruits produced from plants in pots are generally of a far richer and higher quality if proper attention is paid to watering.

One of the most puzzling circumstances in connection with Figs is the casting of the fruit, which is very prevalent with plants in pots. Many theories have been advanced, and many articles written as to the probable cause of this and how to prevent it, but with little practical result, for as yet nothing definite has been arrived at. It is without doubt due to some defect of the setting, yet how or from what cause this defect arises I have never been able to determine. Some varieties, even particular trees, are more liable to cast their fruit than others, and that under all kinds of treatment; while others receiving the same

roots standing in a pan of water, and in neither case did the tree cast its fruits, while others alongside treated in the usual manner did so.

Although Figs will grow in almost any situation, there is no plant more benefited by the full and direct rays of the sun. The Fig house, therefore, should be of a light and airy description, so that the plants may be fully exposed to the sun's influence, for on that depends the proper ripening of the wood and the production of the future crop, as well as the flavouring of the fruit. A vinery or some such place in which to start them into growth in spring is very suitable. The plants



FIG. 29.—FIG TREE IN A POT AT CHISWICK.

treatment in every respect do not cast them. It is not the sickly trees that are so much subject to the evil, neither is it the gross-growing ones, but generally those which seem in the best possible condition. It is the first crop, too, more rarely the second, that is cast. It is ascribed by some to a sudden check, to coldness, to dryness at the root or the reverse, or to too much moisture at the time of setting the fruit. All of these conditions are injurious to a certain extent, yet none of them sufficiently accounts for the evil. It is not coldness, as the evil generally occurs at the warmest season of the year. It is not dryness at the root, nor excessive moisture, as I have had plants subjected to each extreme—the one pot-bound and flagging nearly every day, the other with the pot and

may remain under the Vines until they are in full leaf, when they must be removed to more sunny quarters. Fig trees while growing delight in a close, moist, warm atmosphere. In order to start them into growth a temperature of 50° by night will be sufficient. As the plants advance the temperature may be gradually increased to 65° or 70°. During the summer very little fire heat will be required, as by closing the house early in the afternoon a very high temperature may be maintained by sun heat alone. By day the temperature, if by sun heat, may be allowed to rise to 90°, 100°, or even higher, keeping the atmosphere very moist by frequently syringing all over the plants, paths, &c., even in the bright sunshine. In fact, the warmer and moister the atmosphere is the better

the plants seem to thrive. By this mode of treatment red spider, thrips, &c., the great scourges of Figs in a dry atmosphere, are effectually kept in check.

The assistance of fire heat is very little required for Figs during the summer, only on very cold nights and to assist in ripening the fruit of the later varieties. When the fruit is ripening air must be admitted rather freely, and a drier and more bracing atmosphere obtained, as Figs, like all other fruit, are much improved in flavour by having a brisk atmosphere surrounding them while ripening.

The Fig will grow in almost any kind of soil. That, however, in which it seems to thrive best, and to bear the greatest abundance of fruit, is a pretty good yellow loam, resting on a chalky or dry gravelly subsoil. For pot cultivation I have found the following soil answer well:—Two-thirds good yellow loam to one-third lime or brick rubbish, with a free admixture of rotten manure, charcoal, and burnt ashes. When the plants are young they should have a liberal allowance of pot room, so as to grow them rapidly up to the required size. They will produce fruit, however, in a very small pot. I have fruited them abundantly in 6-inch pots. The most eligible size, and that which I should recommend as large enough for all general purposes, is the 12-inch pot—*i.e.*, 12 inches in diameter, in which were grown those exhibited. The same trees may be grown in the same pots for a great number of years. Our practice is to repot all the trees while they are at rest during winter, shaking off a great portion of the old soil, and shortening the roots considerably in the same way as is practised with Pelargoniums. During the summer, when the pots are nearly filled with roots, much benefit will be derived from frequently top-dressing with rotten manure mixed with a little loam.

Figs while growing freely require a very liberal supply of water; indeed, if the pots are tolerably full of roots they can scarcely be over-supplied. Liquid manure may also be applied with advantage. When the fruit is ripening, however, water must be applied more sparingly, as an over-dose at that time will deteriorate the flavour, and cause many of the fruits of the finer varieties to split open, especially in dull, cold, cloudy weather. Great care is therefore necessary in watering, &c., at this stage.

It is an old saying that "a pruned Fig tree never bears." It is, however, like many others, only half true. The Fig tree will bear any amount of pruning; there is no plant more benefited by summer pruning—*i.e.*, pinching off the growing shoots—than the Fig, and even in winter it may be pruned to any extent with impunity. It is true that if we cut back in winter all the shoots on which are situate the fruits which form the first crop, that crop will be sacrificed. We obtain, however, a very abundant second crop if attention be paid to the pinching of the growing shoots as closely as possible during summer. While the trees are young and vigorous the shoots will elongate considerably in spite of all the pinching. These in winter should be cut back to one-half their length, and the same process of close pinching continued. As the plants grow older they will make more stubby, short, close-jointed wood, which in winter will not require much pruning. Of the trees exhibited (now eight years old) most of the largest had the half of their branches cut back in winter, and the other half left unpruned, excepting when the plant became too large; then it was headed quite down, and by this means the whole of the plants were kept compact and of a uniform size. In summer the young shoots are pinched, first at from 2 to 3 inches in length, then as closely afterwards as it is possible to do so. This continuous and incessant pinching induces fruitfulness in a Fig to a very great degree. All the shoots that are pinched throw out one and sometimes several fruits at the axils of the leaves, while those not pinched more rarely do so.

Another point of considerable importance is that of forming the plant on a single stem. Independently of its more handsome appearance, I have found such plants to be much more fruitful than where a multiplicity of stems are allowed.

Lastly, with respect to the selection of varieties for cultivation. If pot culture is intended I would recommend considerable variety—firstly, because there is a charm in variety; and, secondly, because Figs vary very much in flavour according to the situations or conditions under which they may be growing. For instance, some of the higher flavoured and finest Figs require much heat and bright sunshine to bring them to full perfection, and it may happen that these conditions cannot be fulfilled; the weather may be cold and sunless, and more heat may be wanting than can be supplied—then some of the second-rate sorts surpass the better ones in flavour. Of the highest flavoured sorts I would select Col di Signora Blanca, Grosse Verte, and Bourjassotte grise. These, however, all require considerable heat, the last named being perhaps the finest and most constantly good variety in the collection. Of the most free-fruited kinds may be named White Isehia, Violette de Bordeaux, White Marseilles, and Brown Turkey; and for hardy varieties—varieties suitable for cultivating in the open air against walls in this country—in addition to the White Marseilles and the Brown Turkey commonly to be met with, I would venture to recommend the earliest of all our Figs, De la Madeleine, Grosse Violette de Bordeaux, and Grosse Monstrueuse de Lipari, which are all possessed of the property of "first bearing"—the term used in the Fig countries to denote those varieties which retain and ripen off the fruit which is produced on the wood of the previous year's growth. Our summers are in general too short to allow of the Fig ripening more than the first crop, so that only those varieties which are possessed of this property (and it is peculiar to some varieties) can be considered

suitable for open air cultivation in this country; but on this point, as well as on many others in connection with Figs, we have much to learn.

FLORISTS' FLOWERS AT HIGH BLANTYRE.

NORTH of the Tweed there are several places somewhat conspicuous for the rearing and cultivation of florist flowers, and one among them has been growing steadily in importance, beginning in the way of small things, and working dourly, as the Scotch say, but progressively up, is that of Mr. Matthew Campbell at Auchendraith. Although the writer has been in the neighbourhood for thirty-five years, the other day was the first time he was privileged to have a look in at this place, and a glance sufficed to show that it is great in Carnations and Picotees, Pansies, Dahlias, and in Hollyhocks as well as many border flowers, Pyrethrums particularly.

CARNATIONS AND PICOTEES.

The collection of Carnations and Picotees was particularly noteworthy, as they were in the height of flower, and I would elect to speak of some of them in detail. The more prominent of them were Paen, heavy red-edged; Robert Scott; Becky Sharp, heavy purple-edged; Thomas Millar, one of the most beautiful of the group, with the lacing as if almost artificial; Dodwell's Lena; Mr. Campbell; Muriel, very showy; Nellie, extra fine; Purple Prince; Mr. Payne; J. B. Bryant; Zerlina; Mr. Sharp; and Red Brae Seedling, with a splendid constitution, forming an excellent breeder.

In Carnations, among the scarlet and crimson bizarres, there was nothing more effective than Admiral Curzon, Master Fred, Robert Houlgrave, Joseph Lakin, and Wm. Bacon, although this one shows signs of sporting. In pink and purple bizarres the most marked among them were Sarah Payne, Thomas Anstiss, E. S. Dodwell, Wm. Skirving, remarkably strong and fine, and Sir Garnet Wolseley. Among pink and purple flakes George Melville stands at the head of the list. President of Magdalen, Squire Meynell, James Douglas, Florence Nightingale, Mayor of Nottingham, Juno, and Dr. Foster. In scarlet and rose flakes, Thalia, Sybil, Crista Galli, John Ball, Mr. Symonds, George Lamb, Matafor, Tom Lord, Jupiter, Ivanhoe, Henry Cannell, A. Holmes, Madge Wildfire, and Meg Merrilies were noteworthy flowers. Unfortunately many of the varieties have a tender habit, but throw up much "grass," and in time die out. The great object in the raiser of the present day is to encourage a good constitution. Some of Mr. Douglas' seedlings which we saw here have much of that feature about them, showing that the raiser has striven for this desirable quality.

The gem, undoubtedly, of the whole collection is Mrs. Muir, a pure white Carnation, twice the size of any of its compeers we compared it with, and having a fine shell petal, but forms into a flower of model form—the acme of the raiser. In respect of comparison Nellie Anderson is nowhere, nor Boule de Neige, nor the Duchess of Connaught, nor Snowflake. It is a veritable giant among selected Carnations, bearing stems about 3 feet high, and flowers branching from seven to nine on each main stem. This is by no means usual even among the grosser growing, bizarre and flaked forms. The patch at Auchendraith was worth a day's journey to see. The raiser of it was the late John Muir, Carlisle, who has left a widow and family, and Mr. Campbell avers that the whole of the proceeds of some 600 plants he has to dispose of he will hand over to the widow. I think Mr. Dodwell had a plant of it last year, and can speak of it from his own knowledge. There are twelve very large seedling beds, each 4 feet across, just one mass of showy flowers. The vigour was such as to put out of court the beds of the named new selected varieties. As showing how variable some seedlings are from others, it may be mentioned that seed taken from Penshurst Yellow, in two rows, reproduced a very mixed progeny with only a couple or so of yellow seedlings, while another row sown with seed taken from George Melville was very little sportive from the parent. Some of the flowers in this group are bound to take a position some day—one large scarlet bizarre particularly, measuring about 4 inches across, being splendid in petal, in substance, and in general outline. Out of this batch are bound to be picked some noteworthy crimson and ruby selfs, one of the latter being excellent.

DAHLIAS.

Dahlias are grown in large quantities, comprising Pompon, Cactus, and Show, and show that from first to finish in the growth of the season their wants have been thoroughly appreciated and met. Of course they are the gourmands of outdoor plant life; not even the Brobdignagian vegetables that we occasionally see eating so much manure in every way, but drinking abundantly of the moisture that is poured into them, which, fortunately for Mr. Campbell, is not far to seek here. The plants, unlike many places, are not overthinned of wood, but the flowers are grand—very grand—now, and will be up to the arrival of frost. It appears that for cut flower purposes the ladies have taken to the Cactus-form rather even than the single, and if there be one of that class more captivating than another it is the fine scarlet and white—as bright as a Carnation in fact—Wm. T. Abery. The maroon Empress of India is also excellent; Asia is a fine blush white; Amphion a fine large buff, and Honoria. These are the chief among the novelties, although there are scores meriting commendation. Among Show Dahlias standing out prominently among their fellows for the day were Primrose, Mrs. James Greig, Mr. Peter McKenzie, a fine shaded crimson; Wm. Garrick, possibly the largest and best crimson in cultiva-

tion. No ordinary twelve or twenty-four stand would hold these to be comfortably seen. Indeed since the old Criterion days the points gained are in advance, for in addition we have even larger size, better raised centres, more gouge-like florets, and if ever there was formal perfection in a flower it is here. You need no conventional gyrations to bring up a perfect geometrical type. Turner's Royalty is also a splendid flower, and the whole collection is so well grown and so choice that it is a pity that it is in so outlandish a place for general sight seeing.

PANSIES.

Mr. Campbell has always had a *penchant* for Pansies, and the cool bottomed ground answers their wants in ordinary seasons generally well. The season through which we are passing has been more disastrous in the months of June and July than for years, and consequently great havoc has been made with the choice selected named sorts grown for show and showing purposes. Every care has had to be taken that some of the weaklings were not lost altogether, and consequently a crop of flowers on such is out of the question. However, there are some sorts that have stood the test, and are grandly in flower. The so-called Fancy Pansies particularly are very striking and very good; but if I were compelled to grow one, and one only, I would unhesitatingly give my vote to Miss French, which is far in advance of anything here. Its large indigo blue blotches, surrounded with a belting, as if drawn by a pair of compasses, of pure white; its purple and yellow upper petals are like a fine piece of Eastern-designed garment; and then, to crown all, the substance of the flower is so pronounced to the eye that one would think it was a combination of silk velvets. Others we could do with are Mr. John Elliott, also indigo blotches and white edges, and the colours seem to be fast; Maggie Scott, purple top petals, mulberry blotches, with bronze and yellow edges, exceedingly showy; and Donald Morrison, chiefly purple and yellow, broad edges of great size and excellent substance, and many more too numerous to mention. We must not omit the pretty Lizzie Duncan, a grand black blotched flower, with pure white edges, with the top petals shaded purple and white. I am not "in" with this permission on the part of floral authorities to allow the two top petals, if they be of the requisite form and substance, to be "mixy mixy" in colouring, when the lower petals must be distinct and well defined in that way.

Although Mr. Campbell chiefly confines his attention to florists' flowers he has a try at most things—Tuberous Begonias, Rubber plants, and Tomatoes among the number. He has hit a good cultivating mark with the latter, his method being to starve the plants till they are set, and then "go for them." By this means he doubles their productive powers in a given space.—J. ANDERSON.

KILCRONAGH, CO. KILKENNY.

THIS is the beautifully situated residence of Raymond de la Poer, Esq., D.L., the present high sheriff of the County Kilkenny, and himself a warm friend and patron of horticulture generally. Sojourning at the popular watering place of Tramore, I was recommended to see Kileronagh, "an unpretentious place some dozen miles distant on the Kilkenny side of Waterford, where some lessons may be learned, and where most things in the gardening way are well done." After returning I must say the description is correct, and I will briefly refer to what came under my notice. The residence is very venerable looking, surrounded by many kings of the forest that have seen many summers come and go, and is approached by a carefully kept winding avenue and small lawn neatly mown. Many improvements have been made by the present owner since the estate came into his possession, from an Italian named Bartolucci, now dead some time. This latter gentleman had some eccentric ideas of improving a garden, for he was in the habit of carting the surface soil away to top-dress the lawn. The most recent was the rebuilding of an extensive pentagonal conservatory, not yet completed, to contain chiefly Tree Ferns, warm house Palms, all the better foliage plants, such as *Dracenas*, *Caladiums*, foliage *Begonias*, *Dieffenbachias*, *Anthuriums*, *Crotons*, *Pandanus*, *Musas*, together with an assortment of flowering greenhouse and stove plants and climbers. As yet there are but a few specimens of the former, chiefly Palms, Cycads, and Tree Ferns, too tall for the other houses, accommodated here, as the ornamental and encaustic tiling and fixtures are not yet completed, so we pass out to the lawn, flower and sub-tropical garden, passing the numerous tennis and other courts, to have a look at the hardy *Azalea* and *Rhododendron* beds, where numerous groups of Lilies, especially *L. auratum*, with *L. lancifolium* in variety; *L. tigrinum*, single and double; *L. eroceum*, *L. Martagon*, and all the turn-cap section; *Hemerocallis*, *Alstromerias*, *Hyacinthus eandicans*, and numerous allied plants and flowers have seemingly found a happy home. The majority of the *L. auratum* had fifty and sixty blooms, and exhibited a vigour never noticed in pot-grown Lilies. They have been there untouched for some years. The soil was chiefly peat, and they received no petting, so those who fail to grow or maintain in vigour this magnificent Lily had better take the hint.

In other beds were numerous plants of the hardy Mediterranean Heaths, *Ceanothus rigidus*, *Desfontainia spinosa*, *Berberis stenophylla*, *Benthamia fragifera*, *Escallonia Ingrami*, *Weigela amabilis*, *Hypericum*, *Forsythia suspensa*, *Eurybias*, and a large selection of *Spiraeas*, *Rubus*, *Prunus*, &c., all seemed healthy and happy. It is only fair, however, to say they are admirably protected from all injurious winds by judicious planting. On our way to the Rose garden we pass a remarkable basket bed that at once arrests attention, about a dozen feet in

diameter. There were four shelving concentric circles, one above another, the centre on the top being occupied with a fine-foliage *Aralia*; then came in succession tricolor *Pelargoniums*, *Fresine Lindeni*, Tuberous *Begonias* in alternate colours, and lastly variegated *Periwinkle*, acting as fringe and drooping gracefully to the ground. If any reader wants the constituents of an effective lawn basket bed I commend this as very effective. The foliage and succulent plants, *Castor Oil*, *Tobacco plants*, *Cannas* (twelve varieties), *Gladioli*, and *Funkias* are each passed, and generally having separate beds, and we reach the Rose garden. Hundreds of *Roses* of all sections are grown here, and though every attention is paid, various stocks tried, and some grown on their own roots, still the vast majority seem not happy, nor even as fairly healthy as I should have expected. The head gardener, Mr. Crawford, who kindly escorted myself and gardening friends, tells us they enjoy excellent health for two years, and then decay's effacing fingers become only too apparent. Even when grown in the old soil of a Vine border equally with maiden loam, which seems fairly good, the result is much the same in the vegetable and fruit gardens as on the lawn. With the dwarfs the usual stock is the *Manetti*, but on their own roots the result is much the same. At present a large square is being budded on the seedling *Manetti* with the view of securing more vigour. Yet all the *Teas*, *Maréchal Neil* also, are grown against walls, and on the whole seemed doing best. The climbers on the dozen arches in the Rose garden were very effective a month since.

Anything in the nature of bedding out is not this season aimed at, but the numerous borders on the lawns, and the mixed borders walled in, are replete with the usual good plants. There is a small rock and alpine garden exclusively reserved for the proprietor, but I was unfortunate in not finding him at home to learn many facts of his specialities, which seemed to contain many things rare and not often found in private gardens.

Approaching the garden proper we pass the Melon pits and have a look at the fruits and the system of growth. The two principal varieties depended on are *Blenheim Orange* and *Laurie's Beauty*; the former is well known; the latter Mr. Crawford finds as hardy and useful as *Munro's Little Heath*, though I have never seen it elsewhere. He has another, named *Hampstead Park Seedling*, under trial, and so far it is most encouraging. No artificial heat has been used for two months, and the fruits continue to "set" and to grow on luxuriantly. The same applies to the Tomato pit, beds and banks of stable manure being used to start the plants, and sun heat being solely depended on afterwards, due precaution being taken to close early so as to imprison as much thereof as possible. Within memory, probably, no warmer June came for this purpose. The varieties found to do best are *Dedham Favourite*, *Perfection*, and *Hathaway's Excelsior*. I find that vigorous early growth and not too much moisture are here the best antidotes against *Peronospora*. In fact those planted on the back wall of my greenhouse are never watered, and my only complaint is that they are too vigorous. Adjoining are the Marrows (*Muir's Prolific*) and Gourds, if anything too vigorous.

High Pressure Water Supply.—What an economy, as well as convenience, nay a blessing, would this be in every garden, not merely for the proprietor, but for the garden hands, but still more for the plants. There was nothing of the kind here until the advent of Captain de la Poer, and now a hose can be turned on any part of a garden of about 4 acres, or the numerous houses therein, and one man can quickly do the work of at least five. This is secured by connecting a force pump, worked by a pony or donkey, with a passing stream or millrace, and filling a 5000 gallon tank on the top of one of the out offices. There the water, if not already soft, is fully exposed to the sun, and a few leading lines of piping take it all over the garden and houses. A hydraulic ram, if feasible, might even be cheaper, but where possible no proprietor would think of reverting to the obsolete system of dragging (often hard water) in cans or barrels, by the garden employés.

The Vegetable Department.—I cannot say whether it is good culture, good varieties, and judicious and timely planting, or the assistance of the already mentioned soft water supply that accounts for the excellence of what came under our notice (probably all four combined), but my friends and I have rarely seen finer; and Mr. Crawford agrees with most good gardeners in thinking this department of their responsibility should not be the weakest. Just a few references. Carrots.—Rust and grub spoil what escapes the wireworm only too frequently. Here an effectual antidote is found to be a dressing at the time of planting the seed of burnt refuse mixed with fresh soot. The varieties, after various trials, remain *Summer Favourite*, *James' Intermediate*, and *Carters' Perfection*. Beans.—B. S. Williams's *Earliest* has here superseded the old prolific *Mazagan*. Peas.—Among dwarfs *Stratagem* is still unrivalled for size of pod and quality. The others preferred of a dozen varieties grown are *Veitch's Perfection*, *Telephone*, and *Laxton's Supreme*. Potatoes.—When Mr. Crawford came here, more than a dozen years since, his first effort was to secure a Potato (variety of *Myatt's Ashleaf*) he became acquainted with in the Duke of Sutherland's gardens at Dunrobin as likely to specially suit this soil. Yielding to few in my knowledge of Potatoes, and having tested both the quantity and quality of this strain, I must say after thirty years' experience I know of no recent introduction to excel it. Every other vegetable seems well cared for and made the most of.

The Fruit Garden.—Like most other gardens this year the falling away is considerable from years past. Though a few of the *Codlins* and *Pippins*—notably *King of the Pippins* among the Apples, and the *Duchess* and *Beurré Diel* among Pears—bear a limited crop, on the

whole all suffered seriously from the hurricane that swept the flowers away at the time of fertilisation. The heaviest crops generally were among bush fruits and Strawberries; in fact the crop of Gooseberries still is enormous, and after a month's gathering every day the best of Elton Pine was collected to-day among the Strawberries. Figs do well outdoors. All the older varieties of Strawberries bore full crops; they were heavily mulched, but many of them are to be discarded for Laxton's Noble, Pioneer, King of the Earlies, and A. F. Barron. I can only ask space to name the collections of Primulas, Cinerarias, Lilliums, Gladioli, Tuberous Begonias; or the three remarkable hedges of Lavender, Clematis (twenty varieties), and Sweet Pea, each 50 yards long, worth going a long distance to see.

The Early and Late Vineries.—In the former the Black Hamburgs and Raisin de Calabre are advancing and colouring rapidly. Though young ones they bear heavy crops. Very seldom, too seldom, is the second named seen, though the bunches and berries are generally very large. No bunch here will be under 12 lbs. In the later house the Muscats are all that could be desired, and though free from insects or disease, Mr. Crawford would not recommend under any circumstances they should be planted outdoors as here. He thinks they should be inside and wholly under control.

The Store and Forcing Plant Pits.—Here are many of the large specimen plants that have won the first prizes wherever shown, such as Palms, Dracenas, Crotons, large Adiantum farleyense, A. concinnum, A. cuneatum, and the Gold Fern, none less than 3 feet high, and more across. I cannot hope for space to name the several varieties of Acalyphas, Marantas, Sonerilas, Dieffenbachias, Eranthemums, tall Pandanus, Aralias, Dicksonias, Scaforthias, Gleichenias, Davallias, and a select collection of Orchids. The roof is covered by Stephanotis, Kennedys, Passifloras, and Bignonias. Rather curious, where all are so well done, the fine Eucharis Lily, after repeated experiments, should fail, notwithstanding being repotted, cleaned, and washed in petroleum. I have recommended Mr. Crawford to try a higher temperature.

The Greenhouses and Cool Range.—After the length to which these notes have extended I shall confine myself to merely naming a few striking good things. Here for the first time I found Bougainvillea glabra flowering profusely in a house without any artificial heat for months past. Many of the finer kinds of Lilliums are now blooming profusely, and a specialty very telling was the use made of such foliage plants as Acacia lophantha, Grevilleas, small Palms, Aralias, Ferns, and hardy Dracenas and Cordylines among such flowering plants as the better kinds of Cannell's round-flowered Pelargoniums and Tuberous Begonias, Abutilons, Fuchsias, Gloxinias, Clivias, Polygalas, Salvias, Sparmannias, and a host of the customary greenhouse plants. The custom is to neglect the greenhouse at this time, there is so much to attract outdoors, but here is an effective method of decoration.

The Chrysanthemums.—From here in many former years came the first prize winning stands at Dublin, Clonmel, Waterford, and elsewhere. It is painful to think that for some reason or reasons not satisfactorily explained, at the final potting from the 6 to the 10-inch pots, the 400 plants grown—then all in splendid condition—sustained a check, resulting in the loss of lower leaves, roots, &c., and from which it is hopeless to think they can now recover, for show purposes. Permit me in conclusion, on behalf of myself and friends, to warmly thank Mr. and Mrs. Crawford for the courteous and hospitable attentions we received.—W. J. MURPHY, Clonmel.

ABOUT SPARROWS.

IN the first place, I cannot understand why it is this particular bird is so continually held as useful to the farmer and gardener, in comparison to the injury it does. For more than fifty years I have had the sparrows under observation, either in town or country; and I have come to the conclusion that in the country I would very much rather be without them; and I only wish that those epicures, so-called, who delight in lark puddings and stews, would, instead of these delightful songsters, substitute the sparrow, which is really deliciously appetising. I never, at civic or other feasts, partake of larks, on principle.

It is said that at the breeding season the sparrow feeds its young entirely on caterpillars and other insects. From long and continued notice of the habits of the bird, I must deny this. In many instances, when the insects have been scarcer, the sparrow has taken the bloom buds out of my Gooseberry bushes, Plum trees, and even the White Thorn. I know very well the so-called sparrows' friend will argue there was an insect in the bud. This I proved again and again to be not the case, for when I put nets to keep the sparrows off over some, as a test, I found the bushes healthy and fruitful. They picked off my Crocus blooms by the hundred, my Polyanthus, my Primroses, and some Hyacinths in their wantonness, for I have again and again seen them hopping round the plants, picking them and tossing them down. When I fed my birds they drove away the hedge sparrows, the tits, wagtails, and other insect-eating birds; they attacked and drove out of the nest-boxes my starlings, and are the worst enemies in this way that martins and swallows have. In these ways they did me infinite harm during the vaunted breeding season. But I am bound in all justice to say that when aphides were about they were most industrious in searching them out; but then, this same work would have been well done by other and soft-billed birds they had driven away, such as I have mentioned; also whitethroats, robins, wrens, &c., which birds do not feed on corn and seeds of large size. The sparrows pecked off the Peas as soon as they

appeared above ground, spoiling row after row. They ate the new-sown seeds of the Radishes, and the young plants as soon as they appeared; and so with Lettuce, besides much other damage; and all this in the spring.

This is all apart from the immense damage they do the farmer in the autumn in what they eat and spoil of his corn; and yet I am told to uphold the sparrow, and to try and persuade people of its "all goodness." I cannot do it conscientiously, so I will not attempt it. I have said the sparrow is a pest, and I maintain that it is. A writer is quoted in these words:—"We see them every minute of the day in continual progress, flying from the nest for a supply, and returning on rapid wing with gnat or caterpillar." I do not value this evidence in the least degree. I have had sparrows' nests under close observation during the time of feeding the young, and I have never seen them bring a gnat. It is not their class of insect food. This is a slovenly way of writing; gnats come out during evening, when martins and swallows take them. People generally are not alive to the fact, and I find many naturalists the same—because some birds feed on insects they will eat all kinds. Each variety has its particular food, and a locality may be swarming with one particular kind of insect, and yet some varieties of birds would be dying of hunger in their midst. This is so. Yet people are continually writing about the good birds do, without the requisite knowledge of which, how, when, and where, and in what way. I am asked often how to get rid of slugs from the garden. I answer, "Put a duck or two in." "Oh, but," say they, "we have lots of birds." But no birds but ducks eat white slugs, and so they "leave it to the birds," and the slugs reign supreme.

It is quite immaterial to me whether others like to have their gardens and fields denuded of produce by the sparrow. If they prefer it, be it so. I have only stated what I personally know to be facts.—HARRISON WEIR, Sevenoaks.

CARNATION EXHIBITIONS.

IN Mr. R. Dean's article on "Carnation Exhibitions" in your last issue he says it is matter for wonder that we do not see better flowers staged at country shows. Well, I think one great reason is the poor prizes which are given compared with those which are offered for Roses, Dahlias, and other florists' flowers. For instance, at the Liverpool Show the first prize for eighteen Roses is 30s.; for eighteen Carnations and Picotees it is 10s. Then at the Shrewsbury Show the first prize for twelve Carnations is 7s. 6d., at Burton it is 10s., and at Salisbury 10s. In fact, there is only one general show I know where good prizes are offered for Carnations and Picotees, and that is Leicester. There they always have fine flowers, finer in fact than are seen at some so-called national shows. That clearly proves that where prizes are offered which will pay expenses they will secure good exhibitors and *vice versa*, and I think if show committees were to offer better prizes there would soon be an improvement in the quality of the flowers staged. There is one other particular, which other flower shows might copy from Leicester, and that is to fix a time for staging, and keep to it. At too many shows you find a time—say 11.30—fixed, and instead it is nearer 1.30 when the exhibits are all staged. Then the judges have to hurry over their work, and it is often only half done in consequence.—ARTHUR R. BROWN, Handsworth, Birmingham.

THE PARIS EXHIBITION.

THE JAPANESE GARDEN AT THE TROCADERO.

VISITORS who, on entering the Exhibition by the Jéna gate, follow the avenue of Chestnut trees, regard with curiosity a space enclosed by a palisade of Bamboo, at one of the corners of which, supported by a high pole, floats an enormous white flag with a large brown disk. There is the spot set apart for Japanese horticulture, worthily represented by Mr. Kasawara, horticulturist at Tokio, who has converted this corner into one of the most curious, as it is also one of the most frequented parts of the gardens. The ground being on a somewhat inclined slope the enclosure is approached by a rustic flight of steps, the stakes and the trunks of trees forming the steps, being placed vertically. For that the heavy trunks have been cut into rounds, 20 centimètres* in thickness, and the small ones are simply driven into the earth as stakes. The landscape park is arranged to give an idea of the taste which presides at the making of gardens in Japan, descriptions of which have been brought back by travellers. We find a small sheet of water with a zigzag outline, and an island 2 square mètres in area. In order to retain the water they have placed, touching each other, posts of different heights and sizes. On the borders of this sheet of water, which is surrounded by a narrow belt of grass, are scattered some Pinuses, Thuiopsis, Biotas, Cycas revoluta, Chamerops, &c. On the right is a slight construction in Bamboo (this is the only wood employed) covered with mats made of reeds and open on both sides. Exquisite tea is served here, and they sell also certain Japanese products, Japan vases, baskets, &c. We notice also certain kinds of suspensions formed of one or several rings decorated with moss, on which are affixed rhizomes of Davallia bivalata. The fronds growing on the surface of these contrivances produce a very original effect.

The second portion of the ground devoted to the culture of various plants is divided into two parts separated by a slope of 1 mètre necessi-

* About 8 inches; a mètre is equal to 39.37 English inches.

tated by the configuration of the ground. Chrysanthemums and Lilies are the most important. Amongst these last we remark chiefly those for which we are indebted to the Japanese. There are certain Lilies which European horticulturists cannot multiply, the bulbs diminishing in volume every year, and only producing plants less and less strong. Bulbs are therefore brought from Japan every year in large quantities. *Lilium auratum*, *L. speciosum*, and its varieties, *L. Kretzeri rubrum* and *L. Krameri*. It is the same with the *L. Leichtlini*, *L. cordifolium elegans* or *Thunbergianum*, *L. odorum*, commonly called *L. japonicum Colchesteri*, &c., which are imported on a much smaller scale. *Pæonies* and *Caladium esculentum* are also objects of well conducted culture.

But the principal curiosities of the Exhibition of Mr. Kasawara are the trees and shrubs in a dwarfed form cultivated in Japan vases for fifty and one hundred years. Trees which in our parks attain from 10 to 20 metres (about 11 to 22 yards) in height are kept in bowls from 50 to 60 centimetres (about 20 to 24 inches) in height with distorted branches, stunted by age. A just idea can then be formed of the difference between our taste and that of the Japanese, who have a marked predilection for everything which is little, and with whom diminution is synonymous with perfection.

Amongst the most interesting of these plants are *Rhynchospermum jasminoides*, *Juniperus chinensis*, *Pinus parviflora*, *Osteomeles athyldifolia*, *Thuia obtusa*, *Ginkgo biloba*, *Podocarpus (Nageia) rotundifolia*, *P. macrophylla*, *Damnacanthus indicus*, *Nandina domestica*, *Quercus cuspidata*, *Dendropanax japonicus*. Some *Acers* of the Japanese Maple series, *A. palmatum*, *A. japonicum*, *A. trifidum*, *A. pietum*, &c., are added to the list. All these plants are reared and cultivated with manures in Japan vases, which would be a delight to many small amateurs. We have still to mention a little conservatory in which are exhibited specimens of the small *Dendrobium moniliforme*. They altogether give the spectator a good idea of this miniature nature which the Japanese love and which forms the basis of their gardening art. The specimens, with few exceptions, were brought from Japan at great expense. This was quite useless, as M. Kasawara might have found in France cheap plants from his country to form the foundation of his garden plantation. He would then have had nothing more to do but exhibit his dwarfed trees to add the picturesque to the predominant vegetation. Many of his plants died on the passage from Yokohama to Marseilles, which has been a great loss to the importer, and we doubt much whether the sale of the survivors will be productive, the taste for these curiosities being little spread in France. However, it may be the attempt made by this horticulturist, who has come so far, is worthy of praise.—(*Revue Horticole*.)



LA FRANCE.

THIS is one of my chief favourite Roses, consequently I have a good number of plants, and have been enjoying a plentiful supply of flowers during the past two or three weeks. There has been considerable difference this season between the early and the late flowering of this Rose, which I do not remember to have remarked so particularly before. In June and July comparatively few blooms were produced, and these were very poor, wanting in substance, colour, and fragrance, so that we were forced to the conclusion that *La France* was degenerating, and that it would have to be superseded. Early in August, however, the second flowers were produced, and there was such an agreeable change in their character that our hopes were restored. They assumed their usual form, the fragrance was exquisite, and the colour very much darker than ordinary—considerably darker, and richer in fact than I remember observing them before, and much in the way of a new variety of this type that was brought into notice a year or two since. Some of the early and half-formed flowers were followed by seed pods, and on one plant I have now half a dozen large fruits ripening fast. Have any good varieties been raised as seedlings from *La France*?

ROSES FROM CUTTINGS.

It is so easy to increase most H.P. Roses from cuttings in the open air that it is not surprising many have been induced to add to their stock in this way. Some time since I raised a number in this way with only a fair per-centage of losses, and the plants so obtained made rapid growth, and for three or four years prospered greatly. Now I can see too evident signs of deterioration that extra attention has failed to check, and it seems unless there is some surprising change that another season they will be little good. There are a few well marked exceptions to this, and one of these is the variety *John Hopper*, and so far from deteriorating this is becoming even more vigorous and floriferous than before. I have noticed the failing more especially amongst the dark Roses, all in my collection, except perhaps *Charles Lefebvre*, giving indications of weakness.—SURREY AMATEUR.

GRAND MOGUL AND JEAN SOUPERT.

A WELL-KNOWN Rose authority has submitted flowers, wood, and foliage of the above two varieties for comparison. In the case of

Grand Mogul the flowers are of good shape and substance, and brighter in colour, with more scarlet in the edges and under side of the petals, than *Jean Soupert*. The leaves are rougher, duller, more crumpled, and the spines much larger. There is a noticeable difference in the leaves, for those of *Jean Soupert* are flatter, smoother, and the pinne more acute, the spines being considerably smaller than those of Grand Mogul. Further, it is stated that *Jean Soupert* rarely produces a good bloom. The varieties are admitted to be near each other in floral characters, but it is contended that Grand Mogul is a better Rose, and this is borne out by the specimens placed before us.

REVIEW OF BOOK.

The Uses of Plants: a Manual of Economic Botany. By G. S. BOULGER, F.L.S., F.G.S. London: Roper & Drowley, 11, Ludgate Hill. 1889.

MUCH has been contributed in recent years upon the subject of economic botany, and exhaustive works have appeared dealing with the subject in various aspects. The museums at Kew containing such extensive, well-arranged collections, and the guide books issued in connection with them have drawn public attention to the numerous products of the vegetable kingdom, and conveyed a great amount of useful information. The book under notice seems intended to give an epitome of the knowledge gained in the past fifty years, but we should have wished that it had been more fully treated, as a good portion of the work is little more than a catalogue. It opens with a review of economic botany more than fifty years ago, and this is followed by a chapter on the progress of economic botany during the past half century (1837 to 1887), both of which are introductory to the principal portion of the book. This is in ten parts, dealing with foods, materia medica, oils, gums, dyes, fibres, timbers, &c.

We extract the following portion of the introduction to the chapter on foods:—

"In no class of our wants is our dependence on the vegetable kingdom so strikingly seen as in our food. With the exceptions of water and salt, all our food is, either directly or indirectly, of vegetable origin.

"There is hardly any class of plants, or any part of the plant, that has not contributed in some form to our food supply. Ferns, Mosses, and Club Mosses afford little or no nutrient matters; but, not to speak of candied Violets and Rose petals, the fleshy corollas of the *Mahwa* (*Bassia latifolia*, *Roeb.*) form an important article of diet to men and animals in India, and have been imported into this country for the latter; whilst in the genus *Typha*, of which the common Reed-maces are well-known British species, even the pollen has been employed, both in *Scinde* and in *New Zealand*, as a bread-stuff. The stigmas of the *Saffron Crocus* (*Crocus sativus*, *Bert.*), the cultivation of which in *England* is extinct, and the unopened flower buds of the *Clove* (*Caryophyllus aromaticus*, *L.*) and the *Caper* (*Capparis spinosa*, *L.*), the fleshy peduncles of the *Fig* (*Ficus Carica*, *L.*), or the *Cashew-nut* (*Anacardium occidentale*, *L.*), and the succulent bases of the bracts in the inflorescence of the *Globe Artichoke* (*Cynara Scolymus*, *L.*), are other instances of the employment of unusual structures as food.

"In this department of vegetable technology the most striking feature in the progress during Her Majesty's reign is, perhaps, the results of the vastly increased facilities of transport, steam navigation having rendered distant lands tributary, even of their fresh produce, to our population, which has so long outgrown its home supplies of the necessaries of life. In this way many perishable articles have now found their way even into the market of our streets; whilst many improved processes have added largely to our supplies of preserved fruits and vegetables. In 1882, for instance, we imported in all 64,240,749 cwt. of Wheat, of which 24,500,000 cwt. came from the United States, 11,000,000 from India, 3,000,000 from Canada, and more than that amount from Russia, besides 52,000,000 cwt. of other corn. Owing to the continuous reduction of virgin land into cultivation in the far west of Canada and the United States, the exporting capacities of these countries are rapidly increasing, whilst increased railway communication so facilitates this export that it is stated that Wheat, which is said to cost 40s. a quarter to grow in *England*, may possibly be delivered in *Liverpool* in a very few years at 23s. We are at present importing Potatoes most largely from France; but of raw fruits our supplies are drawn from Malta, the Azores, Canaries, Madeira, the United States, and even the West Indian islands. Thus in 1878 the Azores alone shipped over 410,000 boxes of Oranges, each containing 400, to *England*; and in 1882 we imported in all over 4,250,000 bushels of Oranges and Lemons. In 1886 we imported 3,261,460 bushels of raw Apples, of which 1,647,052 came from the United States, whilst of the raw fruit 'unenumerated' imported during the same year, 906,000 bushels came from Spain.

"In 1837 Pine Apples were almost exclusively home-grown, and, necessarily, expensive; but, writing in 1854, the late Professor Archer says:—'The importation of Pine Apples from the Bahamas has now become an extensive trade; more than 200,000 were imported in 1851. . . . For export to Europe it is gathered before it is quite ripe, and usually reaches *England* in pretty good condition. The English grown Pine Apple usually is from 10s. to 12s. per lb., while the imported ones rarely exceed half-a-crown for the whole fruit.' In 1867 this fruit was first exported from St. Michael's, in the Azores, 427 fruit being despatched in that year. Much capital was then invested, and in 1875-76 over 34,500 were sent out. Since then the trade has so in-

creased that those islands, with the Madeiras and Canaries, now afford us our chief supply, though, by the use of refrigerators, they are now brought from the West Indies. Fruits of various kinds, especially Peaches and Apricots, having been exported in syrup from the United States, mainly since 1867, the preservation of the Pine Apple in this manner was first carried out at Nassau (Bahamas) in 1874.

"Similarly, the trade in Bananas, of which fruit only 564 bunches were imported from St. Michael's in 1879, has enormously increased, though nothing more has been heard of the 'Plantado passado,' or dried Plantain fruit, recommended by Mr. P. L. Simmonds in 1854. The Plantain (*Musa paradisiaca*, L.) and the Banana (*M. sapientum*, L.) are generally considered distinct species, but vary so as to defy discrimination. They produce far more food, in proportion to the space they occupy, than any other plant. One Banana plant will yield three bunches, each weighing 44 lbs. in the year, which is equal to 140,000 to 400,000 lbs. on three acres. Thus the same area that yields 33 lbs. of Wheat, or 99 lbs. of Potatoes, will produce 4400 lbs. of these fruits. Mr. Simmonds calculated that the almost imperishable food substance referred to could be sold in London at 3d. a lb. Professor Church speaks of the Banana as 'a nutritious food, having less water and more nitrogenous matter than is commonly found in fresh fruits. It contains, when ripe, much sugar, but very little starch.'

"As in many other departments of the present inquiry, the progress made in the half-century can be to a great extent gauged by a comparison of the articles now in commercial use with those reported upon at the time of the Great Exhibition of 1851. Undoubtedly the greatest change that has taken place in our food supply, so far as derived from the plant world, during this period, is the enormously increased consumption of Maize, and the introduction of glucose, which is largely prepared from it. No doubt our consumption of many fresh vegetables and fruits, of Asparagus, Tomatoes, Spinach, Artichokes, and Mushrooms, has increased more than proportionally to the increase of population; but this has been mainly met by more extensive home market gardening, and has not seriously affected our imports. The extension of the cultivation of Maize throughout Asia, Africa, America, and Southern Europe has been mainly the work of the last 150 years. It is cultivated with less labour, probably, than any other cereal. Prior to the Potato famine of 1846 Maize was not a regular article of British commerce. In 1847, 3,614,637 qrs. were imported; in 1850, 1,286,263 qrs.; in the first eight months of 1876, 27,000,000 cwt.; and in 1886, 31,000,000 cwt. Of this last amount, 16,700,000 cwt. came from the United States, and 7,576,612 cwt. from Roumania. The removal of legislative restrictions has led to its employment in large quantities in malting, as well as in cattle-feeding. Many preparations of Maize are also popular articles of food, such as corn-flour, oswego, and maizena. It is poorer in flesh-formers than Wheat, but richer than Rice, and it contains more oil than any cereal; but 64½ per cent. of its composition is starch. It cannot be relied upon to ripen its grain in England; but may sometimes answer as a fodder-crop, the young stems being very rich in sugar, and yielding in warmer climes from 50,000 to 80,000 lbs. of green fodder per acre. In Brittany it forms a useful autumn crop on sandy soil too poor for Clover or Lucerne. Three-fourths of the Maize produced in the United States is grown within 450 miles of Springfield, Illinois. In the Western States it is sometimes grown as the cheapest form of fuel. It was not until 1853 that glucose was prepared by treating the starch with dilute sulphuric acid, which has afterwards to be neutralised and removed as sulphate of lime. In 1881, 11,000,000 bushels of Maize were converted into glucose in the United States. In 1885 there were in Germany about fifty factories engaged in the manufacture of glucose, mainly from Potato-starch, in which 10,000 tons of 'hard' sugar, with little dextrin present; 20,000 tons of 'syrup, with much; and 1250 tons of 'colour,' or glucose burnt to caramel, were produced. It can be produced at half the price of cane-sugar, and is mainly used in brewing and confectionery. In 1886 we imported 502,567 cwt., of which 441,374 cwt. came from Germany."

HORTICULTURAL SHOWS.

READING.—AUGUST 28TH.

BRILLIANT weather favoured the autumn Exhibition of the Reading Horticultural Society on the above date, but the heat was not so great as to be oppressive, hence an excellent display could be inspected without discomfort. Few shows are held in a more agreeable situation than that in the pleasant town famed for seeds and biscuits. The Forbury Gardens at Reading are admirably laid out with smooth lawns, cheerful flower beds, and shady walks, and within these gardens are the Abbey ruins—huge massive walls. The Show is held amongst the ruins, by permission of the Mayor and Corporation of the town, a canvas covering stretching from wall to wall shielding the exhibits. The interior is delightfully cool and abundantly roomy, while sloping turf-covered banks enable the exhibits to be arranged in the free informal manner that is alone consistent with true effect. Last year the Committee moved in a new direction by coupling with the Show an evening illumination of the gardens, adding the further attraction of a good band, and the result was so satisfactory that it was repeated this year with equally good results.

The Show this year was a marked improvement on any of its predecessors. To begin with, the entries were far more numerous, indeed the entry fees showed an excess of £12 over last year's amount, and as the gardeners in the home and adjoining counties know their business as

well as those in any part of the kingdom, there was quality as well as increased quantity to note. There was perhaps a slight falling off in specimen plants, a sign of the times which has been noted at other shows, but groups, flowering plants, and cut flowers were better than ever, fruit an enormous improvement, and vegetables fully equal to the very high standard of last year. It may be well to begin with what was perhaps the greatest feature of the Show.

FRUIT.

There was a splendid display of Grapes, both black and white. Peaches and Nectarines were very good. Plums were excellent, and Apples in advance of what might have been expected from the season. Black Hamburgh Grapes (three bunches) were shown by seven growers, so that there was plenty of competition, and the quality was of a high order. The first prize bunches came from Mr. Lane, gardener to Miss J. D. Smith, Ascot; they were excellent clusters, well ripened and coloured, but a little rubbed. Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, was a good second with medium sized, well ripened bunches carrying a good bloom. Mr. Turton, gardener to G. Hargreaves, Esq., Reading, third with irregular bunches; berries good, but imperfectly coloured; and Mr. Ashman, gardener to J. Crews, Esq., Billingbear, was deservedly commended; the berries were small, but well ripened, and the bunches very large. There were nine competitors with any other black, and Mr. Waite, gardener to Col. the Hon. W. P. Talbot, Esher, of vegetable growing fame, won with a trio of capital bunches of Madresfield Court. The berries were a little irregular in point of size, but the bunches were very large and well formed, the fruit carrying a beautiful bloom. Mr. Osman, gardener to Sir E. Colebrook, Bart., Ottershaw Park, was second, his fruit a little lacking in colour, but the bunches good. Mr. Robins, gardener to E. D. Lee, Esq., Hartwell House, was third with finely ripened but rubbed fruit; and, to show the excellence of the competition, it may be added that extra prizes were awarded, very deservedly, to Mr. Cakebread, gardener to Sir P. Rose, Bart., Rayners, and Mr. Ashby, gardener to Mrs. Fanning, Whitechurch.

Of Muscat of Alexandria (three bunches), there were eight capital lots, forming an excellent class. Mr. Lane was first with superb clusters, the bunches of medium size, and the berries possessing the clear amber hue indicative of perfect ripening. Mr. Ashby was second, his clusters were enormous, but not perfectly ripened, the same remarks applying to the third prize lot of Mr. Cakebread. Again extra prizes were deemed necessary to do full justice to the exhibits, one being awarded to Mr. Currey, gardener to Col. Pepper, Salisbury, and another to Mr. Maher, gardener to A. Waterhouse, Esq., Yattendon. Eight also entered with any other white kind. Mr. Ashman won with very fine bunches of Buckland Sweetwater; Mr. Currey second with the same variety, berries small, but well ripened, and Mr. Maher third, also with the Sweetwater. An extra prize was awarded to Mr. Osman for a good sample of Foster's Seedling.

Peaches were best shown by Mr. Lees, gardener to Mrs. Marsland, The Wilderness, who had a grand dish of Téton de Venus, large and beautifully finished, a fine, richly flavoured Peach not often exhibited. Mr. Pound, gardener to G. May, Esq., Caversham, and Mr. Cox, gardener to J. H. Blagrove, Esq., Calcott Park, were second and third with Princess of Wales, nearly equal in point of size, but Mr. Pound's fruit the cleaner. There were six other dishes. There were twelve dishes of Nectarines, none noteworthy in point of size, but all admirably ripened and coloured. Mr. Pound was first with a splendid dish of Pine Apple, in the highest degree creditable to him, Messrs. Cox and Ashby being second and third with Victoria, both capital. There was only one dish of Apricots—Moor Park—shown by Mr. Maher, and the second prize was awarded. Of Figs there were three lots, Mr. Ashby being first with a good dish of White Ischia, fully ripe, and Messrs. Booker, gardener to W. B. Monck, Esq., Coley Park, and Mayne, gardener to Lord Saye and Sele, Reading, second and third. There were no less than fifteen exhibits of Plums, three dishes of each—a splendid display. Mr. Cox was first with Washington, Pond's Seedling, and Kirke's Purple, Mr. Turton second with Bodaert's Green Gage, Washington, and Pond's Seedling, and Mr. Waite third.

Kitchen Apples were shown largely and well, dessert varieties not quite up to the same standard. There were four lots of the latter, six dishes of each, Mr. Paxton, gardener to the Hon. C. S. Irby, winning with an excellent collection, the varieties being Peach, Worcester Pearmain (poor), Blenheim Orange, Duchess of Oldenburg (a splendid dish), Strawberry Pippin, and one incorrectly named. Mr. R. Webb, Beenham, was a creditable second, and Mr. Hinton, gardener to J. Leslie, Esq., Reading, third. There were seven exhibits of culinary varieties, and here Mr. Webb was placed first with a capital collection, the varieties being Warner's King, Cox's Pomona, Stirling Castle, Gravenstein, Wellington, and Ecklinville Seedling. Mr. Cox was a very good second, and Mr. House, gardener to J. O. Taylor, Esq., Reading, third. Pears (dessert) were admirably shown by Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End, who was a good first, Messrs. Paxton and House following. With stewing varieties Mr. Paxton won, Messrs. Goodman and Read following.

Of Melons there were six brace. Mr. Dockerill, gardener to G. W. Palmer, Esq., Reading, won with beautiful fruits of Hero of Lockinge, deliciously flavoured; Mr. Bowerman second with the same variety; and Mr. Lockie, gardener to the Hon. G. Fitzgerald, Windsor, third with a variety named Imperial, scarlet fleshed. Cucumbers were well shown by Mr. Lockie, who was first with a very neat brace of his variety Perfection; by Mr. Booker, who was second with Phippen's Improved Telegraph; and by Mr. Kneller, gardener to W. S. Portal,

Esq., Malsbanger Park, who was third with Model. Mr. Phippen offered prizes for his variety of Telegraph, and some good fruits were shown.

Collections of fruit formed an admirable display. Mr. Ashby was first with eight dishes, a most praiseworthy exhibit, comprising Black Hamburgh and Muscat of Alexandria Grapes, Sutton's Masterpiece Melon, Prince of Wales Plums, Royal George Peaches, Elruge Nectarines, White Ischia Figs, and Morello Cherries. Mr. Goodman was second; he had splendid Black Alicante Grapes, and fine dishes of Dagmar Peaches and Williams' Bon Chrétien Pears amongst others. Mr. Aitken, gardener to Major Meeking, Slough, was third; and there was one other exhibit. Mr. Cakebread won with six dishes, his collection consisting of Black Alicante and Muscat of Alexandria Grapes (both excellent), Morello Cherries, Queen Pine, Hero of Lockinge Melon, and Washington Plums; an excellent display. Mr. Osman was a good second with capital Grapes, and Mr. Paxton third. Of miscellaneous fruits the best collection was that of Mr. Goodman.

Messrs. T. Rivers & Son had an extensive and excellent display of fruit, both gathered and on trees in pots, which evoked much interest. It was not in competition.

PLANTS AND GROUPS.

Specimen stove and greenhouse plants were not quite up to the standard of former years, and it is evident that huge trained plants are losing popularity, not by any means too soon. Allied, however, with some admirable groups and smaller decorative plants they produced an imposing effect. Mr. Aitken won with nine specimens—healthy, well-flowered plants of *Clerodendron Balfourianum*, *Rondeletia speciosa* major, *Allamanda grandiflora*, *Eucharis amazonica*, *Lagerstroemia indica*, *Bougainvillea glabra*, *Dipladenia insignis*, *Ixora Williamsi*, and *Allamanda Hendersoni*. Mr. Mould, Pewsey, was second with *Statice Butcheri* and *Erica Uhriana* superba, in very fine condition; Mr. Wills, gardener to Mrs. Pearce, Southampton, was third. Variegated and handsome foliage plants were not so good; indeed, they scarcely call for comment. Mr. Wills had some clean, well-grown plants, and was placed first. Stove and greenhouse Ferns were staged in capital condition by Mr. Aitken, all being fresh, clean, and healthy; and Messrs. Dockerill and Wills, who were second and third, also had plants which did them credit. Mr. Butcher, gardener to G. Palmer, Esq., Reading, won with a single specimen, a good plant of *Eucharis amazonica*, well furnished with its beautiful flowers. Mr. Bright, gardener to P. Harslake, Esq., was second with *Fuchsia Charming*. For a specimen new or rare plant Mr. Wills won with the variegated leaved *Phrynium variegatum*. Mr. Lane won with table plants, Mr. Aitken following, and Mr. Dockerill with *Lycopodiums*.

The groups were in every respect admirable. The first prize was awarded to Mr. Woolford, gardener to A. Palmer, Esq., Reading, for a beautiful arrangement, light, graceful, and free, which showed the improvement that has been effected in plant arrangement of late years. A smaller group from Mr. Aitken was placed second, and that from Mr. Wills third. There was a doubt as to the latter two, but none whatever as to the first.

Achimenes, *Fuchsias*, *Balsams*, *Cockscombs*, *Liliums*, *Coleuses*, flowering and variegated *Pelargoniums*, with *Palms* and *Begonias*, added to the display. Messrs. Dockerill, Bright, Aitken, Woolford, Balchin, Booker, Lockie, Ashby, Castle, Mayne, and Midwinter were amongst the chief prizewinners. A first-class certificate was awarded to a new *Coleus* exhibited by Mr. Phippen, and named *Duchess of Fife*, for its dwarf compact habit.

CUT FLOWERS.

These were extensively shown. Mr. Walker, Thame, won with eighteen *Dahlias*, and also with twelve varieties, Messrs. Cheal & Sons, Crowley; Mortimer, Farnham; Wheeler, Henley; Shrimpton, Beech Hill; and Woolford also showing them well; and Messrs. Cheal & Son exhibited bunches of single varieties in good condition. *Gladioli* were best shown by Mr. Dockerill. Mr. Walker had a charming stand of quilled *Asters*, and also won with French varieties, all beautiful blooms. Mr. Midwinter also showed *Asters* remarkably well. Double *Zinnias* from Mr. Walker were in splendid condition, and easily won him first prize. Mr. Phippen won with eighteen bunches of cut flowers, mostly hardy, and indicating the present great popularity of herbaceous plants. Mr. Such, Maidenhead, was second. With twelve bunches Mr. Castle was a good first. *Phloxes* were best shown by Mr. House. With hutton-hole flowers and bridal bouquets Messrs. Perkins, Coventry, and Phippen were most successful. Messrs. Jeffries & Son, Cirencester won with *Roses*, Messrs. Cheal & Perkins following, Messrs. Perkins showing Mrs. John Laing well in another class. A certificate was awarded to Mr. Owen, Maidenhead, for his excellent strain of *Begonias*. Messrs. Such, Maidenhead, and Oakshott & Millard, Reading, showed cut flowers and plants in pots. The local classes were well filled and helped to swell the display.

VEGETABLES.

These are usually a great feature at Reading, several of the large seed firms offering sufficiently handsome prizes to secure the entry of some of the best vegetable growers in the south of England. This year the display was as good and extensive as on any previous occasion. There were some marvellous examples of the new *Onion Ailsa Craig*, referred to on page 179 of last week's *Journal*, *Potatoes* and *Cauliflowers* being also very fine. The exhibits in the special classes are referred to in the order we found them on the stands. Mr. Pope, gardener to the Earl of Carnarvon, Highclere, was first with a collection in the com-

petition for Messrs. Oakshott & Millard's prizes. He had some grand specimens of *Ailsa Craig Onion*, capital *Potatoes* (*Abundance*) and *Tomatoes* (*Perfection*), also very good *Celery*. Mr. Lye, gardener to W. H. Kingsmill, Esq., was second; Mr. Goodman third; and Mr. Harris, High Wycombe, fourth. For nine kinds of *Potatoes*, also Oakshott & Millard's prizes, Mr. Lye won, showing *Reading Perfection*, *Chancellor*, *The Magistrate*, and *Satisfaction* well amongst others; Mr. Pope was second; and Mr. Springbett, Sulham, third. Messrs. Carter and Co., High Holborn, also offered prizes for a collection. Mr. Lye was first, *Holborn Model Leek* and *Early Autumn Giant Cauliflower* being excellent; Mr. Harris was a very good second; and Mr. Waite third. All these were fine lots. Mr. Kneller, gardener to W. S. Portal, Esq., Malsbanger Park, won Messrs. Webb & Sons' chief prize, *Perfection Tomato* being excellent, also *Ailsa Craig Onion*. Mr. Bowerman was a very good second, and Mr. Waite third. Mr. Fidler, Reading, also offered prizes for a collection, and the first fell to Mr. Pope for a capital lot; Mr. Bowerman second; and Mr. Lye third. All these growers had every reason to be proud of their exhibits. Messrs. Sutton, Reading, did not offer prizes for vegetables as in former years, but instead offered premiums to the value of £12 in various other classes, in addition to the Society's prizes. Messrs. R. Beale & Co., New Southgate, were highly commended for their fertilising moss, as being especially adapted for sending plants by post; also for their plant collar, for supporting top-dressings to plants in pots.

SANDY AND DISTRICT.

THE twenty-first annual gathering of this continuously expanding Society was held on Friday last in the beautiful and compact little park of Sandy Place, the situation and surroundings of which are admirably adapted for a successful exhibition, embracing under the spacious head of horticulture such a wide range of objects as is here brought together; for in addition to horticulture pure, farm, market garden, and dairy produce, poultry, pigeons, birds, rabbits, bees, and bread, and this year the Committee successfully introduced a department for dogs. The weather was exceptionally fine and hot, and the hutter in the tent constituted a useful self-registering thermometer, the major portion of the exhibits in that division being reduced to the condition of sardine oil. There was consequently a large concourse of visitors from the neighbourhood, the surrounding counties, and the metropolis; from which special trains were run, but the tents from the intense heat were partially deserted.

Plants in pots were well and largely shown, four collections being staged in the open class for ten stove and greenhouse plants in flower, distinct, and some fine specimens were placed at much disadvantage by being set up on an enormous staging far above the eye, the consequence being that there is no *coup d'œil* in the plant tent at Sandy, a few insignificant objects only meeting the eye and blocking the view of this tent; and only those well accustomed to studying the upper tier of a picture gallery can with any degree of ease inspect and admire plants some 6 feet through towering up with their names at telescopic distance, the space in front for visitors being so contracted that a careful examination becomes painful.

Probably the amount paid for carpentering in the erection of the massive stage would more than provide a wider and more suitable tent, and exhibitors might be saved the heavy and risky business of hoisting up these heavy specimens. In this class Messrs. J. Cypher & Son, Exotic Nurseries, Cheltenham, had a grand specimen of *Phenocoma prolifera* Barnesi, well flowered plants of *Bougainvillea glabra*, *Clerodendron Balfourianum*, *Allamanda Hendersoni* and *nobilis*, *Statice profusa*, and four fine *Ericas*; this collection was placed first; Mr. W. Finch, gardener to J. Marriott, Esq., Coventry, coming second with handsome and regularly matched plants of *Rondeletia speciosa* major, *Ixora Williamsi*, *Fraseri*, *Dipladenia amabilis*, *Miltonia spectabilis*, *Clerodendron*, and three *Ericas*. Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, Hunts, was third; and Mr. J. F. Mould, Nurseries, Pewsey, Wilts, was fourth. Mr. Rabbitt, gardener to General Pearson, The Hazels, Sandy, took first for twelve well flowered specimens of *Zonal Pelargoniums* in the open class, the varieties being of well known sorts; Mr. Redman gaining second place. For six grand and well grown *Fuchsias* Mr. G. Claydon, Woodbury Hall Gardens, was deservedly awarded first, also for six stove and greenhouse Ferns and six foliage plants.

Cut Flowers.—For forty-eight cut *Roses* (not less than twenty-four distinct varieties) open to all, stands of fairly good size, substance, and colour for the season were set up by Messrs. Paul & Son, The Old Nurseries, Cheshunt, Messrs. G. & H. Burch, Rose Growers, Peterborough, and Messrs. Laxton Bros., Nurseries, Bedford, their exhibits being recognised in the order placed. In Messrs. Paul's first prize stand were good flowers of *Souvenir d'Elise*, *Perle des Jardins*, Mrs. Jowitt, Mrs. Baker, and *Maréchal Neil*, Messrs. Laxton's best blooms being *Ella Gordon*, *Harrison Weir*, *Madame S. Rodocanachi*, and *Alfred Colomb*; in Messrs. Burch's lot Mrs. John Laing, *Duchess of Bedford*, *Chas. Darwin*, and *Anna Olivier* were noticeable, but the intense heat of the tent made sad havoc with the flowers in the latter part of the afternoon. For twenty-four *Roses* (not less than twelve distinct varieties) open to amateurs, Mr. E. B. Lindsell of Bearton, Hitchin, was first, his stand containing fair blooms of *Chas. Lefehvre*, *Baroness Rothschild*, *Comtesse Nadaillac*, *Rubens*, and *Anna Olivier*. Mr. Lindsell was also awarded first for a stand of six *Gladioli* in the same division. For twenty-four spikes of *Gladioli* in the open class Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, showed the only and a truly magnificent stand, and were awarded first honours. Their stand included *Iolanthe*,

first-class certificate Royal Aquarium, rich orange rose, flushed deeper, a striking large seedling of their own raising; Baroness Burdett Coutts, pale rosy lilac; Grande Rouge, brilliant scarlet, fine spike; Africaine, good dark brownish red; Ovide, Rupert, A. Brongniart, Flamingo, Enchantress, Conquerant, Rayon d'Or, Pyramide, Ondine, Mikado, Atlas, Florence, and several promising seedlings as yet unnamed.

For twenty-four Dahlias in the open class Messrs. Heath & Son of Cheltenham were placed first with large but somewhat coarse flowers. Their stand, containing notable blooms of W. H. Williams, Thos. Hobbs, Jas. Keith, Mrs. Gladstone, Miss Cannell, Mrs. W. Stark, and Wm. Rawlings. Mr. H. Glasscock, the Bishops Stortford veteran, gaining second with refined but smaller flowers, amongst which were prominent Glowworm (Turner) new 1888, very fine bright scarlet and a decided advance in its class, Mrs. Theobald, Burgundy, Mrs. Harris, and Mrs. D. Sanders. For twelve Dahlias Mr. W. H. Apthorp, Cambridge, was first and Mr. G. Arnold, Leighton Buzzard, second, and for six Fancies Mr. Glasscock was first and Mr. Apthorp second. Asters, Zinnias, and French and African Marigolds were largely represented, the latter especially fine, the chief prizewinners in these classes being Dr. Swaine, Arlsey, Mr. Rabbitt, Mr. H. E. Fuller, and Mr. W. Bourne, Cambridge. Mr. Bourne was also awarded first for a fine stand of hardy cut flowers. Messrs. Laxton Bros., Bedford, also showed a large and showy collection of hardy flowers not for competition.

Fruit.—This was not equal to the displays of former years, some of the principal exhibitors being absent. For a collection of eight varieties Mr. R. Carter, gardener to Col. Duncombe, Waresley Park, was the only and successful exhibitor, showing a very creditable collection. For two bunches black Grapes (Hamburgs excluded) Mr. R. Kitehen, Thorney, Cambs, was first with well-finished Gros Maroc; and Mr. H. Ridgwell, Cambridge, second. For two bunches of Black Hamburgs Mr. C. Moore, St. Neots, was first; and Mr. J. A. Baker, St. Ives, second. For white Grapes the chief prizewinners were Mr. G. White (for Muscats), Mr. R. Carter, and Mr. C. Forbes, Trumpington, Cambs. Pears, Apples, and Plums were largely shown, but mostly underripe, and inferior in colour and size.

Vegetables.—These are always a feature at Sandy, were shown well and largely in all the divisions. Potatoes were perhaps rougher and somewhat more undersized than are usually found here. For a basket of twelve varieties of vegetables in the chief amateurs' class Mr. F. Faint, gardener to R. Hoare, Esq., Maiden Hill, Hertford, was first; Mr. G. Vyne, gardener to C. Franklin, Esq., Bedford, second; and Mr. H. Ridgwell, third. For Red Tomatoes Mr. J. Witney, Turvey, Beds, was first with sound medium-sized even fruits of Model; and for Yellow Tomatoes Mr. J. A. Baker was first. Some fine dishes of Perfection Red were passed by the Judges as being past perfection. For a collection of six varieties of Potatoes in the same division Mr. Faint was first with very clean and even specimens of Satisfaction, Abundance, Snowdrop, Schoolmaster, International, and Beauty of Hebron; and Mr. W. Tildesley, Bedford, second. The best Potatoes in the Show were a dish of Satisfaction from Mr. Jas. Simkins, Shillington, Beds, and which obtained the first prize in the chief amateurs' class for twelve white kidneys; the tubers were remarkably handsome, and averaged 2 lbs. each in weight. Mr. Simkins also obtained the first prize for a dozen Globe Spanish Onions, very perfect specimens. Mr. Dale, gardener to J. N. Foster, Esq., Sandy Place, was awarded first also for twelve fine White Spanish Onions of the Sandy Prize type. Many other good collections of vegetables were shown, but the exhibits at Sandy are too numerous and extensive to compass in one day, and it is a matter of regret that so educating a collection should have to be dispersed, half seen and half appreciated, at the end of a few hours only.

HARPENDEN.

THE eleventh annual Exhibition was held in Wrothamsted Park on Wednesday, August 28th. in most brilliant weather. This told well in favour of the Society after having such a disastrous day last year. It is to be hoped it will now be able to hold its own, though I fear the balance is still on the wrong side.

Taking the plants first, Mr. Turk, gardener to Mr. Bosanquet, Ponfield, Little Berkhamsted, was first; Mr. T. Notting, gardener to Mr. Maple, second; and Mr. Pepper, Tenin Water, third. For six foliage plants Mr. Metting was first, Mr. Turk second, Mr. Sconce, gardener to Mr. Hil, Kankwick, St. Albans, third. For forty-eight Roses Messrs. Paul and Son were first, for twelve the same firm was also to the front. They were first for twenty-four Dahlias, and Mr. Littlechild, St. Albans, was a good second. For twelve bunches of herbaeous plants there was a good competition; Mr. J. Hershaw was first, Dr. Maelcan second, and Mr. Turk third, all showing well. For a similar number of stove and greenhouse cut flowers Mr. Anning, gardener to Mr. Brown, Diswell, was well to the front, many of his blooms being of choice Orchids; Mr. Turk was second.

For the best group of plants Mr. Nutting was first, Mr. Turk second. There were other two groups, and contained some well cultivated plants, but the taste in arranging was far behind that of Mr. Nutting, to say nothing of the beautiful specimens put up by him. For table plants Mr. Nutting was again first, Mr. Anning second. For six exotic Ferns Mr. Sconce was a long way ahead with a superb half-dozen, Mr. Nutting second.

For black Grapes Mr. Faint, gardener to Mr. Hoare, Hertford, was first, the same exhibitor coming first for a grand collection of vegetables and a most clean and handsome collection of Potatoes. Among the other successful exhibitors was Mr. Hogg, The Hyde, Luton; Mr. Sibley, Harpenden; Mr. Pepper, Mr. Tilbury.—G. M. H.



FRUIT FORCING.

VINES.—*Early Forced Vines in Pots.*—Those for starting in November must not be allowed to become dust dry at the roots. They will now be at rest, the wood ripe, the laterals cut close in, and the canes shortened to about 6 feet, according to the situation of the plump eyes. Whilst the cuts are dry dress them with styptic or knotting to prevent trouble from bleeding. They should be kept in a cool airy house.

Earliest Forced House.—Early forced Vines, when care has been taken to preserve the principal foliage by cleanly culture and a judicious encouragement of the laterals after the fruit was cut or ripe to prevent premature ripening of the leaves, will be in a condition to be cut ordinarily; but with early forced Vines it is not necessary to wait until all the leaves have fallen before pruning, as the Vines will be sufficiently matured, the wood being brown and hard, and the leaves, or some of them, turning yellow. The pruning will cause the Vines to go more quickly and thoroughly to rest. If in good condition they will afford bunches quite large enough when pruned to a couple of buds from the base, but if the Vines are weak from overcropping or a long course of forcing the spur shoots may be left a little longer, to secure larger bunches. When this method is adopted shoots should be taken from as near the base as possible in the spring, and not be allowed to carry fruit, but be stopped at about the sixth leaf, and the laterals at the first leaf, and subsequently as produced. Such shoots are sure to form good buds; the extra foliage will tend to invigorate and support the fruit on the other shoot, which can be cut away in due time in favour of that retained for fruiting the following season. This alternate system of fruiting necessitates the shoots being kept wider apart for development and exposure to light and air. If the Vines are grown on the extension system it will only be necessary to cut back to plump buds on firm ripe wood, being guided by the space at command, for there must not be overcrowding. It is important that the house be thoroughly cleaned, and the Vines also. Any weakly Vines, or those in an unsatisfactory state, may be improved by removing the soil down to the roots, and substituting fresh loam, with an admixture of crushed bones, to the extent of about a twentieth, and if calcareous matter be wanting add a sixth to a tenth of old mortar rubbish, according to the character of the soil, more being required for heavy than for light soil. Lift any roots available for the purpose, laying them out upon the fresh compost, and cover 3 or 4 inches deep. This is best done before the fall of the leaf. It is a mistake to allow Vines when at rest to become dry at the roots. Comparative dryness is desirable, yet great injury is caused by allowing the soil to become dust dry. The outside border should have a covering of some kind to protect the roots from the heavy autumn rains, which reduce the temperature considerably. Glass lights are preferable, as they throw off heavy rains, whilst allowing the sun to penetrate the soil. Many, however, are obliged to rest content with a covering of leaves and litter after cold weather sets in.

Young Vines.—Those that have made a strong growth and are late in ripening should be assisted with fire heat, maintaining a minimum of 65°, and maximum of 75° from fire heat, continuing it until the wood is ripe, accompanied with free top and front ventilation. Discourage any further growth by the removal of the laterals as they appear, and withhold water from the roots, only the soil must not be allowed to become dry, and, if the roots have the run of outside borders, some spare lights placed over the border so as to throw off heavy rains will be very beneficial.

Late Grapes.—Grapes for some unaccountable reason are ripening early. Gros Colman, for a wonder, is colouring very little behind Black Hamburgs, and its footstalks are more woody than usual. There is nothing like an early start with late Grapes—they require plenty of time. Keep the laterals well thinned, and thereby admit as much air as possible to insure the finishing of the crop, not by large reductions of foliage at a time, but by frequent pinchings. Maintain a night temperature of 70° to 75°, falling 5° to 10° during the night, increasing to 80° or 85° by day, accompanied with a circulation of air constantly, and free under favourable atmospheric conditions. It will require sharp firing to finish those that are only commencing colouring before the days are too short to admit of full ventilation; indeed, more may be done in the next month or six weeks than in twice the time later on. Those Grapes well advanced in colouring and ripening may have the atmospheric moisture reduced; those only colouring should have a moderate amount of moisture to assist their swelling, not neglecting to apply water to the inside border as may be necessary.

MELONS.—The latest plants are fast covering the trellis and showing blossoms. If the crop is wanted quickly the early flowers should be fertilised. A portion of the plants may have the first fruits removed, and they will afford a later and fuller crop from the second laterals. Earth up the plants after the fruit is set, not before, and after that be sparing with the syringe, employing it only during bright afternoons and then early, taking care not to overwater at the roots, yet maintaining a genial moisture in the atmosphere by sprinkling. Promote

also healthy root action by proper moisture in the soil. Plants in frames have suffered seriously, and in some instances irreparable injury from the prolonged cold and wet of the past few weeks. Melons grown under such disadvantageous circumstances are poor in flavour, indeed they are not of any value. Where, however, linings have been duly attended to, so as to promote a genial warmth in the frames and allow of a little air being admitted to provoke evaporation, the plants are healthy and promise to ripen satisfactorily. The plants will only require water occasionally—a damping early on bright afternoons, and should only have moisture in the soil to keep the foliage fresh. Let the fruit be elevated above it on inverted flower pots, applying good linings to maintain the requisite heat, a warm, dry, and well ventilated atmosphere being essential to the well ripening of the crop.

CUCUMBERS.—The shorter days and longer colder nights necessitate the earlier closing of the house, and the employment of the syringe also earlier, so as to have the foliage fairly dry by dusk. Fire heat will also be necessary to maintain a temperature of 70° to 75° by artificial means, falling about 5° during the night. Afford every encouragement to the autumn fruits, removing the first blossoms of a pistillate kind, as also the male blossoms and tendrils. Shading will not be necessary now, and avoid syringing as far as possible, damping being usually sufficient on all but bright days, when light syringing early in the afternoon will be beneficial.

Keep plants in frames rather thin of foliage, have linings as necessary to maintain a steady progressive growth, care being taken not to overwater. As the nights are cold afford a covering of mats over the lights. Ventilate early, closing early in the afternoon, so as to husband the sun's heat, which will do much to maintain the requisite night temperature—viz., 65° to 70°. Sow from now to the middle of the month for a supply of fruit at Christmas and the New Year onwards. Telegraph is good for this, indeed for any sowing, while Cardiff Castle is free and excellent for everyday use.

KITCHEN GARDEN.

RADISHES FOR WINTER AND SPRING.—Salad plants are never too abundant in winter, especially after severe weather, except with those who have proper means of keeping Lettuces and Endive. Radishes are often the only salad existing in the spring months. They may be secured without the aid of artificial means, as they are as hardy as Turnips, and do not deteriorate in severe weather. It is therefore important that all who desire to have something in the form of salad in winter and spring should grow Radishes, and they are especially valuable for amateurs. The China Rose and the Black Spanish are the only varieties we recommend for winter, as they are the only ones we have succeeded in keeping good from November until April. The seed of these must not be sown too soon, as if early they become too large, and by midwinter they will have a vacancy in the centre of the roots. From the beginning to the middle of September is the best time to sow, not in rich soil, as a firm moderate growth is the best to resist the frost. Do not dig land before sowing them, but after clearing away some old crop hoe and rake the surface, and sow in drills 10 inches or 1 foot apart. If they are too crowded when they are a few inches high they should be thinned to 2 inches apart, and keep them free from weeds.

PLANTING SPRING CABBAGES.—Many approve of planting their Cabbage for the spring at two or three different times, and it is a good plan, as if some should chance to be too early the next may be better. We plant at three different times—early in September, the middle of that month, and at the end of it. The system of planting two or three times is also advantageous to the young plants, as in all seed beds some are forward while others are not half ready, and the later plants gain size and substance they would never attain if left in a crowd. Wherever the plants are ready let some be placed out at once. They must have a good position. Our favourite position for planting is after Onions, as these invariably have a good piece of the garden. If the ground is rich now give it a moderate dressing of lime, and fork this in a few days previous to planting. If the soil is poor give it a dressing of manure, which may either be dug or forked in. We do not always approve of the plan of merely levelling and clearing the surface and planting the Cabbages without stirring the soil, as in this case we have often noticed that the plants do not all grow alike, some taking the lead of others; but when the soil is forked over they grow equally. Drills about 3 inches deep should be opened with a drag hoe and the plants dibbled into these. If a small sort keep them 15 inches apart each way, if large give them 18 inches.

LATE PEA PESTS.—We have had to net all our rows of late Peas. The sparrows, of which there are a great many this season, open the pods and remove the Peas as soon as the latter are well formed. A reader explained to us the other day that he had tried everything to frighten them off and failed, and our reply was that he would never succeed until he covered the Peas with nets. This is our only remedy, and as some of the nets that protected the fruit are now disengaged they may be profitably employed covering the late Peas.

THINNING WINTER CROPS.—Spinach, Turnips, and other winter crops are now growing freely, and much of their success in winter depends on their being well thinned. Some keep them very close under the impression that by having a large number they will gain by them; but it is only by admitting plenty of light, air, and sun to late crops that they can be relied on in severe weather, and bulbs or plants that are grown well exposed in autumn invariably prove the most profitable and satisfactory in winter. It is a mistake to let them become very

crowded and then give them a severe thinning on one day, as the full advantages of thinning can only be secured in the case of all crops, more particularly winter ones, by beginning to thin early and never allowing the plants to be crowded at any time.

LETTUCES AND ENDIVE FOR WINTER.—Plants secured from seed sown early in August are now ready for placing out. These will come into use about the end of October and remain good as long as they are kept from frost. Some of them may have to be lifted by-and-by and placed in frames, but in the meantime the whole of them should be planted in the open quarters. Our favourite place for all such at this time is a south, east, or elevated sunny border, as there they grow freely and are generally protected for a considerable time after plants in more exposed positions are suffering. The soil should be forked over previous to planting and the plants may be dibbled in at a distance of 10 inches each way, but if some of them can be shifted into sheltered positions in October they may be planted as close again as this in the rows, and when moved lift every other plant, when those remaining will have plenty of space.

LATE GREENS.—We never approve of vacant quarters in the kitchen garden. The other day a gentleman remarked, "You do not keep much in fallow." Our reply was, "No, it does not pay." There is no use in planting Brussels Sprouts at or after this time, as they would never gain size. Savoys may form small heads, but the Kales will attain a useful size, and so will Leeks, and vacant spots may be filled with these two crops. Continue to earth up Celery and early Leeks, keep weeds down by frequent hoeing, remove all decayed vegetables and leaves, and if any crops are behind give them a stimulant by shaking a little guano round them if the weather is wet, or liquid manure from the same material if dry.



AT THE MOORS.

CAUSES OF SWARMING.

WITH one exception every hive that swarmed was owing to the queen becoming exhausted, which neither supering nor nadir-ing would have prevented. Several were, or ought to have been, young queens of last year, being imported ones, and as true crosses as could possibly be, so much so that I could not tell to what race they belonged. The cause of this being inexplicable I made some inquiry, and was informed that an English dealer had been instrumental in procuring colonies of bees of a different race set in the neighbourhood of a breeder, in order to destroy his trade and reputation, which if true does not redound to his credit, and I hope some other explanation will be forthcoming. The excepted hive that swarmed was owing to an after swarm issuing from another on a windy day, when a part of the bees and queen were blown towards and on to it, when a large swarm issued. I returned all the swarms, having lost one only, and formed a nucleus in an empty hive I sent for on seeing the state of matters. Should the weather clear up these young queens will enable me to supply several persons who have been asking for them, as I have all queens for next season at home.

CAN BEES COUNT.

My bees stand at the foot of one glen and on the point of intersection to the main one that leads to many others, and behind a stone dyke which runs east and west, the hives facing north. The hive I had forwarded to me was placed at the west end of three detached hives, as it is bad policy to crowd the hives. The empty hive was placed 6 feet from the western one, the bees and drones of which alike immediately entered, while some of the bees from the next hive entered the westmost one. I then moved it to 20 feet distant, and this time with the entrance quarter round, and still some bees and drones flew towards it. The lesson is the same as that I have so often taught, Never alter the appearance or aspect of hives after September.

DO BEES FLY IN A STRAIGHT LINE.

It is generally believed that bees when returning to their hives fly in a direct line, but this is not verified here. The bee stands were at the foot of a glen that separates two hills. In order to reach another glen situated at a right angle on the hill at a

considerable elevation rather less than a quarter of a mile distant, where the Heather is extra fine, and where gold was at one time plentiful and is sometimes wrought for yet, in a straight line the bees would have come down the hill at an angle, but instead they flew right down the second named glen until they reached the bottom, then turned to the east at a right angle again, flew down the main glen, and past their hives from 150 to 200 yards where the valley and dyke nearly intersect, then over the dyke, reaching their hives on the lee side of it, flying at least a mile further when windy than when calm.

DIFFERENT RACES OF BEES.

The only regret I have is that those who have lifted their voices against the foreign races of bees were not here to judge for themselves of their superiority. I have read of a colony in America gathering 30 lbs. in a day, which the owner thinks will be able to record 40 lbs. when his hives are in order along with the pasturage. I had a colony of Syrians that gathered 60 lbs. in three days, but 33 lbs. is the highest I ever heard of in this country, and yet my queens never filled "twenty four standard frames" with brood in twenty days. I think one-half of the above is not bad work, which I consider would be the extreme of the breeding powers of my queens this year, and a great deal more than "ten standard frames" would contain. The amount gathered by my bees is treble that any ten-standard frame hive could possibly do. But more of this again.

THE PUNIC BEE.

In compliance with the request of "A Hallamshire Bee-keeper" I took one of these queens to the Heather, but singular to say it has done the least of any hive I had, but must add one trial is insufficient to decide the merits of any race, and it may be the good qualities of this race that has precluded it from reaching the proportionable weight of others; but it is now well forward with young bees, and may at the end surpass others. If the chance of competition fails owing to unsettled weather the good quality of the Punic bee must remain an untried one for another year. Be that as it may, I will give them every chance, but am sure it will be difficult to get a race of bees to surpass the eastern ones. As my convenience for scribbling is not the best I will defer other experiences till another time.—A LANARKSHIRE BEE-KEEPER.



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Carnations Dying (F. L.).—The plants sent appear to have been very weak to begin with—too weak, and hence unable to resist the attacks of a fungus which causes the destruction of so many that are in a debilitated state.

Plants Unhealthy (C. N.).—If the house is suitable in other respects and a genial atmosphere maintained, or in other words, if you have been able to grow similar plants in other structures, you may, we think, conclude the glass is unsuitable, and we should not think of employing the kind you describe. We have seen many failures arise by

the use of very thick rough glass, and we consider it unsuitable for hothouses generally.

Stirling Castle Apple (H. J. H.).—It is not an acid Apple, but an excellent early culinary fruit, with white flesh, very tender, juicy, with an agreeable and pleasant flavour, not in any respect similar to Dumelow's Seedling or Wellington. It is in use in August and September, the tree being a great bearer, and more suitable for dwarf than large culture. Perhaps the specimens were unusually fine from being grown against a wall.

Defective Valve Arrangement (B.).—We have several times stated that for having the heat under control valves must be placed on return as well as on flow pipes under the circumstances you describe. You had better make the necessary provision at once, or cease firing briskly and continuously, or an accident may occur. The more water is heated the more it expands, and it traverses most freely where it meets with the least resistance, and this it appears in your case is along the return pipes.

Stopping Mignonette (W. S. S.).—It takes about a month to six weeks from pinching off the flower spikes until the plants make fresh growths and are furnished with fresh spikes, but much depends upon the condition of the plants at the time of stopping. If they are not very woody when pinched young growths will be produced more quickly than when the wood is hard and stunted; in the latter case it will take six to eight weeks, the plants never being satisfactory when allowed to become exhausted before resorting to pinching.

The "Best" Manures (A. S.).—No one can say what is the "best" manure for a particular soil without knowing the constituents of that soil. If you describe the nature of the soil to which you refer, and especially the herbage, assuming turf is taken from a pasture, we shall be in a better position to advise than by giving a categorical reply to your question in the absence of any data whatever on which to form an opinion worth giving. The quantity of manure to use is also most important, and you do not indicate your proposals in that respect.

Vine Leaf Mottled (A. B.).—There is nothing the matter with the Vine leaf. On the contrary, it is a good leaf, and if all the others are like it the Vine cannot be in a very bad state. The colouring is natural to the variety when the leaves change and assume their autumnal tints. The soil in which you grow Tomatoes will be improved by an admixture of lime shortly before planting, though water from a drain may contain small vibrios which are injurious to the roots of many plants, causing them to have a warty appearance. The crushed flower sent is probably a Nerine.

Injured Vine Leaves (F. J.).—We do most readily admit there is "something wrong" with the leaves sent, but only in one respect can the wrong be righted now, and that is clearing off the red spider with which they are infested. If there is only one young Vine in this state, you had better sponge the leaves carefully yet thoroughly with Gishurst compound, nicotine soap, or even softsoap and tobacco water. This must be done on both sides, for on both we find insects plentifully. This will not materially improve such leaves as you send, as they are beyond restoration, but as you observe others are not so bad, by all means cleanse the whole of them at once. The Vine may then be to some extent benefited, and it will be a decided advantage to destroy the attacking pest. The leaves are also scorched and wanted, mainly through errors in ventilation and general management.

Fungus on Plum Trees (H. B.).—We are of opinion that the condition of the leaves sent is mainly the result of aphides, the filth attending which is almost invariably taken possession of by the black fungus. We have seen many instances of this, not with Plums alone but various kinds of trees and plants. If you can prevent insects, attacking the trees, no matter by what means, and also maintain healthy root action in good soil, we do not think the fungus will attack the trees. This is not the "red rust," which is more difficult to combat and overcome. When trees lose their leaves soon after midsummer they cannot be expected to store material for the production of fruit. We have seen many trees rendered black with fungus this year, the certain result of a previous and serious attack of aphides. The leaves you have sent have always arrived dead and dried; if you send more we should much prefer their reaching us fresher in a box with a little green grass.

Neglected Fruit Trees (Northumberland).—1, The procedure pursued with the wall trees is the correct one, and we can only further suggest that root-pruning be resorted to early in autumn, forming out a trench about one-third the distance from the stem the trees cover in extent of wall space, and as deeply as the roots, which should be detached, the trench being left open for a week or ten days, when it may be filled in, firming the soil well. This may be done early in October. It tends to ripen the wood and buds, and induce shorter jointed and more fruitful wood. If the cutting of the roots be done in a dry time it is possible the leaves may become limp, which will not do any harm, but the soil must not be allowed to become so dry as to cause severe flagging, water being applied to the part undisturbed to prevent the foliage flagging and its premature falling. 2, There ought not to be any suckers at the base of fruit trees. Remove them at once, and in future whenever they appear. The trees are in much too vigorous growth for the formation of fruit buds, for which the heavy manuring is accountable. This, with the looseness of surface, is sufficient cause of their not fruiting. Sowing with Turnips to be dug in in autumn is a novel way of seeking fertility. It would be much better to give a dressing of clay marl,

spreading it evenly on the surface, a hundred earloads per acre not being too much, and after frost it may be pointed in. The ground will not require any manure again until the trees are fruitful. Keeping the soil loose about fruit trees where it is already light is most injurious. A little thinning of the heads where too much crowded with wood would be advantageous, but we do not advise root-pruning or severe manipulation of the heads. If you cannot obtain the clay marl apply a dressing of lime at the rate of 200 bushels per acre, and in early autumn, not burying it deeply.

Gardenias and Eucharises (S. T.).—So much depends on the condition of the Gardenias, and especially the state of the roots, that it is not easy to say whether your plants should be repotted or not. Assuming, however, that they will receive careful attention in watering, they may be safely transferred to pots just large enough to enable the fingers of the workman to pass freely round the balls of soil when in the fresh pots. A larger shift must be avoided. The soil, two-thirds turfy loam and one-third peat, with a little sand, must be pressed quite as firmly round the roots as the soil is in the present pots; and both that soil and the soil to be used must be in a pleasantly moist state, neither very wet on the one hand or dry on the other. The growths must not be shortened. Let water be applied with judgment and the plants be syringed twice a day in bright weather. A shelf near the glass in a stove will be a suitable position for them, as they need sun to harden the growth; yet a little shade must be afforded if needed to prevent flagging or scorching. In October they may be placed in the Cucumber house, and if they have been well managed they will flower in the winter. If there is any fear of mistakes being made in watering after potting, it would be safer to let the plants remain in their present pots plunged in others to prevent the roots drying. Assuming your Eucharises are strong and the pots filled with roots, keep them in the stove and well watered until the beginning of September, then remove them to a drier house, such as a vinery, reducing the supply of water—in fact, only giving sufficient to keep the foliage fresh. After five or six weeks of healthy rest place them in the Cucumber house or where they can have a night temperature of 65°, keeping the roots decidedly moist, and flowers will be produced in winter, always provided the plants are strong enough for flowering, and healthy. Bottom heat will be of assistance in promoting them flowering after the resting period.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H.).—1, *Dipladenia amabilis*; 2, *Dendrobium chrysanthum*. (Pelargonium).—1, *Solidago canadensis*; 2, we do not recognise; 3, *Lycasteria formosa*. (E. M.).—*Polygonum cuspidatum*. (T. L.).—We are unable to recognise your friend's plant by a single leaf. If flowers appear and you send us a specimen we shall be glad to help you. (H. M.).—*Lycium europæum*. (J. J. S.).—*Hibiscus syriacus flore-pleno*. (F. P.).—1, *Ceanothus floribundus*; 2, flowers quite withered, but the plant is a *Cistus*; 3, apparently a small frond of *Asplenium viviparum*; 4, *Selaginella Willdenovi*.

TRADE CATALOGUES RECEIVED.

William Bull, 536, King's Road, Chelsea, London, S.W.—*Catalogue of Tuberous Plants and Bulbs*.

Smail & Co., 23, Lime Street, and 99, Queen Street, Cheapside.—*List of Dutch and other Flower Roots*.

Friedrich Adolf Haage, jun., Erfurt.—*Catalogue of Cacti and Miscellaneous Plants*.

Buckland and Broadbent, Gec Cross, near Manchester.—*Select List of Carnations and Picotees*.

Robert Veitch & Son, 54, High Street, Exeter.—*Catalogue of Dutch Bulbs*.

Edmondson Bros., 10, Dame Street, Dublin.—*Autumn Catalogue of Bulbs*.

Charles Turner, Slough.—*Catalogue of Bulbs*.

COVENT GARDEN MARKET.—SEPTEMBER 4TH.

Business dull, with good supplies, large consignments reaching us from the Channel Islands.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	2 0	2 0	Lettuce, dozen ..	0 2	1 3
Asparagus, bundle ..	0 0	0 0	Mushrooms, punnet ..	0 6	1 0
Beans, Kidney, per lb. ..	0 2	0 4	Mustard & Cress, punnet ..	0 2	0 0
Beet, Red, dozen ..	1 0	2 0	Onions, bushel ..	3 0	4 0
Broccoli, bundle ..	0 0	0 0	Parsley, dozen bunches ..	3 0	3 0
Brussels Sprouts, ½ sieve ..	0 0	0 0	Parsnips, dozen ..	1 0	0 0
Cabbage, dozen ..	1 6	0 0	Potatoes, per cwt. ..	4 0	5 0
Caulicuffs, per 100 ..	0 0	0 0	„ Kidney, per cwt. ..	4 0	7 0
Carrots, bunch ..	0 4	0 0	Rhubarb, bundle ..	0 2	0 0
Caniflowers, dozen ..	2 0	4 0	Salsify, bundle ..	1 0	1 6
Celery, bundle ..	1 6	2 0	Scorzonera, bundle ..	1 6	0 0
Coleworts, doz. bunches ..	2 0	4 0	Shallots, per lb. ..	0 3	0 0
Onions, each ..	0 3	0 6	Spinach, bushel ..	3 0	4 0
Endive, dozen ..	1 0	2 0	Tomatoes, per lb. ..	0 4	0 6
Herbs, bunch ..	0 2	0 0	Turnips, bunch ..	0 4	0 0
Leeks, bunch ..	0 3	0 4			

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ..	2 0	4 0	Oranges, per 100 ..	4 0	9 0
„ Nova Scotia and ..	0 0	0 0	Peaches, dozen ..	2 0	8 0
„ Canada, per barrel ..	0 0	0 0	Plums, ½ sieve ..	3 0	4 6
Cherries, ½ sieve ..	0 0	0 0	Red Currants, per ½ sieve ..	0 0	0 0
Grapes, per lb. ..	0 6	2 6	Black „ ..	0 0	0 0
Lemons, case ..	10 0	15 0	St. Michael Pines, each ..	2 0	6 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2 0	4 0	Lilium longiflorum, 12 ..	2 0	5 0
Asters, per bunch, French ..	0 9	1 6	„ „ ..	2 0	5 0
„ „ ..	3 0	6 0	Maidenhair Fern, doz. ..	4 0	9 0
Bouvardias, bunch ..	0 6	1 0	„ „ ..	4 0	9 0
Carnations, 12 blooms ..	1 0	2 0	Marguerites, 12 bunches ..	2 0	6 0
„ „ ..	3 0	6 0	Mignonette, 12 bunches ..	1 0	3 0
Chrysanthemums, dozen ..	1 0	3 0	„ „ ..	1 6	3 0
„ „ ..	3 0	6 0	Pansies, dozen bunches ..	1 0	3 0
Clove Carnations, 12 bunches ..	0 0	0 0	Pelargoniums, 12 trusses ..	0 6	1 0
Cornflower, doz. bunches ..	1 0	3 0	„ „ ..	2 0	4 0
Dahlia, dozen bunches ..	2 0	6 0	Pinks (various) 12 bunches ..	3 0	6 0
Eucharis, dozen ..	2 0	5 0	Poppies, various, 12 bunches ..	2 0	4 0
Gaillardia picta, 12 bunches ..	2 0	4 0	Roses (indoor), dozen ..	0 6	1 6
Gardenias, 12 blooms ..	2 0	4 0	„ Mixed, doz. bunches ..	3 0	6 0
Gladioli, per bunch ..	0 6	1 6	„ Red, dozen bunches ..	4 0	6 0
Gladioli, bunch ..	1 0	1 6	„ „ 12 blooms ..	0 6	1 0
„ „ ..	1 0	1 6	„ „ „ ..	1 0	3 0
Helianthus, or Sunflower, ..	3 0	4 0	„ Yellow ..	2 0	4 0
„ „ ..	0 6	1 0	Spiraea, dozen bunches ..	0 0	0 0
„ large, dozen blooms ..	1 0	2 6	Stephanotis, doz. sprays ..	2 0	3 0
Lavender, dozen bunches ..	4 0	6 0	Stocks, dozen bunches ..	3 0	6 0
Lilium anatum, 12 blms ..	2 0	4 0	Sweet Peas, doz. bunches ..	2 0	4 0
			Sweet Sultan, „ ..	3 0	4 0
			Tuberose, 12 blooms ..	0 6	1 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6 0	12 0	Fuchsia, per dozen ..	3 0	9 0
Arum Lilies, per dozen ..	0 0	0 0	Geraniums, Ivy, doz. ..	3 0	5 0
Arbor vitae (golden), dozen ..	12 0	24 0	Hydrangea, per dozen ..	9 0	18 0
Asters, 12 pots ..	3 0	6 0	Lobelia, per dozen ..	0 0	0 0
Begonias, various, per doz. ..	4 0	12 0	Marguerite Daisy, dozen ..	6 0	12 0
Balsams, per dozen ..	3 0	6 0	Mignonette, per dozen ..	3 0	6 0
Calceolarias, per doz. ..	0 0	0 0	Musk, per dozen ..	0 0	0 0
Calceolaria, per dozen ..	4 0	8 0	Myrtles, dozen ..	6 0	12 0
Christmas Rose ..	0 0	0 0	Nasturtium, per dozen ..	2 6	4 0
Chrysanthemums, dozen ..	6 0	15 0	Palms, in var., each ..	2 6	21 0
Cockscombs, per dozen ..	3 0	6 0	Pelargoniums, scarlet, 12 ..	2 0	4 0
Dracæna terminalis, doz. ..	24 0	42 0	Pelargoniums, per dozen ..	4 0	9 0
Dracæna viridis, doz. ..	12 0	24 0	Rhodantha, per dozen ..	0 0	0 0
Erica Cavendishii, doz. ..	0 0	0 0	Saxatraga pyramidalis, ..	0 0	0 0
Enonymus, var., dozen ..	6 0	18 0	„ per dozen ..	0 0	0 0
Evergreens, in var., dozen ..	6 0	24 0	Solanums, per dozen ..	6 0	12 0
Ferns, in variety, dozen ..	4 0	18 0	Spiraea, per dozen ..	0 0	0 0
Ficus elastica, each ..	1 6	7 0	„ palmata, per doz. ..	0 0	0 0
Foliage plants, var., each ..	2 0	10 0			



THE LABOUR ACCOUNT.

THE question, Is profitable farming possible? is still an open one in the opinion of many, and attempts to answer it have been made in a variety of ways, both in writing and practice. Landlords have done their part by a liberal rent reduction, and many of them have tried to show what could be done to improve the general practice. What have tenant farmers done?

They have less expense to meet in rent, they have less to pay for labour, because it is cheaper; but though labour is reduced in cost it is still found sadly out of proportion to returns by the majority of farmers, for the simple reason that they have made no alteration in their system of farming. No one can ever be content to go on farming just to pay one's way and obtain mere subsistence; that is to approximate to standing still to be safe, for under such conditions a single bad season may bring a man face to face with bankruptcy. No; farming to profit is the only safe method, and we cannot rest content with anything short of it, but that is impossible with four-fifths of the land under a four, or rather under a four or five-course shift. What use is it to go on growing full crops of corn if it cannot be done profitably? The markets are open to us, we can easily ascertain the full value of every article of farm produce, and a simple calculation will soon show us in what direction our efforts at improvement may be turned with advantage.

In this matter we can do something more than generalise. It is at this season of the year that our plans for the future are made,

and if we are to make a special effort for reform, first of all let us do our utmost this autumn to clean the land, and turn up roughly for winter all that is not required for winter corn. Then let enough be sown down next spring for four or six years with mixed seeds to enable us to dispense with at least half the horses, and to reduce the labour account by one-half. On a 300-acre farm such a step means an annual saving of at least £300, which may well go for cows, sheep, pigs, or poultry, all most profitable farm stock under good management, all bringing quick returns upon outlay.

Such a new departure will require most careful forethought. The starting a new dairy or enlargement of an old one cannot be done lightly, and every detail must be thought out beforehand. The selection of cows is by no means an easy matter. A first-class cow will give daily sixteen quarts of milk of such high quality as will afford enough cream for 2 lbs. of butter; an inferior animal may barely yield 1 lb. of butter from twelve quarts of milk, so that the higher-priced animal may prove the cheaper by far. The cow-house, too, has much more thought bestowed upon it than it once had. Ventilation and cleanliness now have as much attention in the cowhouse as in the dairy. All this means expense at the outset, which may lead to dairy extension being held over for a while, and preference being given to sheep for the first season or two. This is a mere matter of detail; the chief point is to effect a radical change, which shall reduce labour and render profits possible. No doubt the idea of giving a semi-permanent character to layers will alarm many a man who has been long accustomed to leave his pasture to chance, and to plough-in his layers every year for Wheat. He will talk of foulness and poverty as an inevitable consequence of layers four or six years in duration, and yet he will fold sheep upon his second growth of Clover to enrich the land for a Wheat crop. By a very little stretch of thought he should be able to grasp the possible advantage of folding upon older layers, and eventually breaking up the soil richer in fertility than when it was first laid down.

Once extend this system of one-half or two-thirds of the land in pasture or forage crops to all our great corn farms, and corn growing will assume a new phase, for it will then in a very considerable measure become subservient to the requirements of our live stock, and the general aim will be to feed with home-grown corn, and to avoid heavy cake bills. However tempting the price of imported Oats and Maize may be, it will be worthy of consideration if the superior quality of home-grown corn does not render it most profitable for use. Oats much under a weight of 42 lbs. a bushel are not sufficiently nutritious to be worth buying, and the majority of imported samples are notoriously light. A moderate quantity of home-grown Wheat thoroughly well grown would probably obtain a higher price and better demand than we now have. If, too, ensilage assumes the importance in farm economy which we think it must do eventually, and root cultivation falls into abeyance, there will be a still further reduction in labour and a greater degree of certainty in results, for silage is certainly an operation in farming about which there is no uncertainty, and the saving it enables us to effect as compared with haymaking is indeed considerable.

WORK ON THE HOME FARM.

Glad indeed are we to say that Wheat harvest is ended on all our farms, and Barley stacks are going up quickly at last, a change to more settled and brighter weather having come. This was much wanted, as so much of the Barley has a rampant growth of Clover among it, so that it has been impossible to cart the Barley as quickly after the mowing as could be desired. This would tend to show that the sowing of layers with Barley should be avoided so far as is possible, but where there is a persistent clinging to a four-course shift sowing layers with Wheat is never thought of. The Wheat has gone to the stacks in such good condition that there will be no hesitation to thresh out a stack or two early, both for seed and market. We are so much pleased with the appearance of our Salvator Wheat that we have ordered it to be threshed for seed, when this is done we shall be able to report upon the yield. The grain is so large that the weight will, we think, prove quite half as heavy again as ordinary Wheat. One especial merit is that the crop is unlikely ever to become beaten down or lodged. We grew it side by side with a fine crop of Defiance Wheat, which was quite beaten down by rain and wind while the Salvator remained erect. It is

a white Wheat, and if the quality proves satisfactory it is likely to assume a leading place. Our crop was on rather poor land, and will not approach the promised 88 bushels per acre, but then it will assuredly be considerably above the ordinary average.

We have sheep folds upon most of our layers now. Some second growths of red Clover which we intended for seed are being so consumed, as so much of it is barren owing to the dull wet weather. The sheep generally are in a sound condition, but we have had a few losses recently from diseased lungs. Of two sheep so much fallen away in condition that we had them killed, one had a large ulcer in the lungs, and the other had much inflammation and one lung grown to the side. The flock having the taint of foot rot has not a bad case in it now. This is owing to close attention to the feet, and the use of Gell's ointment. We saw recently the small flock of a tenant farmer in disgraceful plight from foot rot; dozens of the sheep limped badly, and some went on three legs. The shepherd appeared to regard it very much as a matter of course. Had he been under our control he would have had the option of either keeping them in better condition or being sent about his business.

OUR LETTER BOX.

Manure for Permanent Pasture (A. D.).—The effect of surface dressings of chemical manure at this season of the year is so uncertain that it is decidedly best to wait till next February before using the manure. The plant present in your new pasture in large quantities is the Milfoil or Yarrow (*Achillea Millefolium*), and its presence indicates that your seedsman added the usual quantity—about 1 lb. per acre—of its seed to the mixture. It is a valuable plant for pastures, is eaten greedily by sheep and cattle, grows with equal vigour in all soils, withstands the effects of drought quite as well as Lucerne, and is to be regarded as an indispensable addition to our best selections of Grasses and Clovers for permanent pasture.

Covered Yards (H. R. W.).—To erect a roof at the price we mentioned you must procure all materials at wholesale rates, be your own architect, and have the work done by a handy man assisted by farm labourers. The sort of handy man we mean should be found on every farm, and he should be able to do all ordinary repairs to implements, carriages, gates, and buildings, to do all the stack thatching, and any other work requiring a little more intelligence and handiness than that of the ordinary labourer. A shilling or two a week above the ordinary rate of pay, and something extra for special jobs, keeps the man contented and enables the master to save many a pound. Having saw mills and a timber yard near you may prove no advantage. Our home farm is within a mile of a town where there are plenty of builders, timber yards, and saw mills, yet we effect a considerable saving by having our building materials from a large wholesale firm of importers at a seaport some sixty miles distant. This even applies to roofing tiles, which are both cheaper and of better materials and finish than those to be had from local makers. If local tradesmen allow business to be thus taken away from them they only are to blame; everyone has a right to buy in the cheapest market. The sort of roof we indicate is of course a rough and ready affair, strength and utility being the leading principle. A span roof for a small yard, a ridge and furrow for a large one, stout unsawn posts, principal rafters, beams and king posts large enough to ensure stability, stout angle irons to beams and posts, screw bolts to beams and king posts. Order the timber either in correct lengths or double lengths, all of it rough sawn, none of it to be planed. If the purchase of materials in this manner is new to you, a statement of your requirements to a wholesale firm may prove advantageous, as they may have stock materials a little different in dimensions to your sizes which would answer the purpose equally well and cost much less. We hope these general hints will be useful to you. Plans and specifications are obviously a little outside our province.

METEOROLOGICAL OBSERVATIONS.

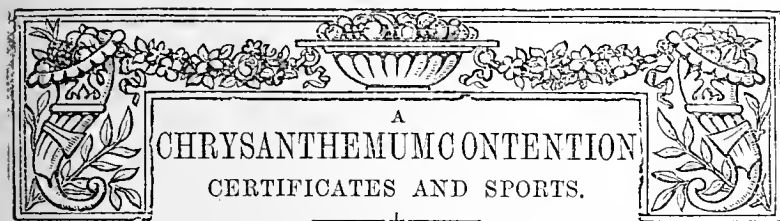
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
August.			Dry.	Wet.			Max.	Min.	In sun.	On grass		
			Inches.	deg.			deg.	deg.	deg.	deg.	deg.	
Sunday	25	29.899	57.6	51.4	W.	57.5	63.4	44.2	109.2	40.2	11.	
Monday	26	30.044	56.9	51.9	W.	57.2	64.0	47.4	101.1	42.8	—	
Tuesday	27	30.265	57.8	52.9	S.	56.9	67.6	45.2	112.4	40.9	—	
Wednesday ..	28	30.233	59.4	55.0	S.W.	57.4	70.3	50.2	115.4	45.3	—	
Thursday	29	30.233	59.2	55.7	W.	58.4	70.9	50.8	116.1	45.4	—	
Friday	30	30.164	66.3	60.0	N.E.	59.3	82.6	49.4	115.4	44.4	—	
Saturday	31	30.155	65.6	61.7	N.E.	60.3	80.1	53.2	115.1	48.3	—	
		30.142	60.4	55.5		58.1	72.4	48.6	112.1	43.9	—	

REMARKS.

25th.—Bright and fresh.
 26th.—Generally cloudy in morning; fine afternoon, with some sunshine.
 27th.—Fine and generally bright.
 28th.—Bright and pleasant.
 29th.—Bright and warm.
 30th.—Bright early, smoke-fog from 9 A.M. to 10.30; then bright again, but rather oppressive.
 31st.—Bright and fine morning; cloudy afternoon.
 Bright week with no rain, the temperature above the average, although the minimum has fallen nearly 3° below that of preceding week.—G. J. SYMONS.



SPORTS of a distinct character are always valuable in any section of Chrysanthemums, but none has ever assumed the importance, obtained the notoriety, and been the subject of so much litigation as the early flowering Mrs. H. Hawkins, a golden variety of the Madame Castex Desgrange type. Few of those who saw it when first exhibited last year could have anticipated that its history would have become so interesting, that it would have been made the subject of an action to recover heavy damages, or that the opinion of some of the leading Chrysanthemum experts of the present time would be in request to determine its distinctness from or identity with other varieties. All this has, however, taken place this year, and a dispute of an unprecedented character in the Chrysanthemum world will shortly be brought to a termination by the decision of special arbitrators.

The history of the case is briefly this, some of the facts having been long familiar to those concerned with these plants, while others were elicited during the course of the inquiry. At the meeting of the Royal Horticultural Society in the Drill Hall, Westminster, on Sept. 11th, 1888, Messrs. Hawkins & Bennett, nurserymen and market growers of Twickenham, exhibited before the Floral Committee a golden sport from George, or more properly, Gustav Wermig (itself a pale yellow sport from the white Madame C. Desgrange), and a first-class certificate was awarded for it. On the following day (Sept. 12th) the National Chrysanthemum Society held their annual Exhibition of early varieties at the Royal Aquarium, Westminster, and to the Floral Committee of this Society Messrs. Hawkins & Bennett also submitted their new sport, with the result that a first-class certificate was again awarded. At this Exhibition Mr. T. S. Ware of the Hale Farm Nurseries, Tottenham, showed "a new Chrysanthemum" of the same type and colour as Mrs. Hawkins, and in the opinion of most of the members they were the same variety. Messrs. Hawkins & Bennett's plants and blooms were, however, in much better condition and were considered to show the character more fully, and in accordance with a rule guiding the Floral Committee in its action the certificate was awarded to the better of the two exhibits, the slight difference noticeable being attributed to cultural causes. All was clear up to this point, but then the difficulties commenced.

At the time of exhibition, or shortly afterwards, Mr. T. S. Ware's plant was named Golden Fleece, and in October of the same year a circular was issued containing particulars, which led to the legal proceedings subsequently taken. Prior to this it appears Mr. Ware had an interview with Messrs. Hawkins and Bennett, at which he offered £10 for the stock of the certificated variety Mrs. Hawkins, a price considered by the former as ridiculously low, and they declined to sell until they had decided to send it out in the usual way. Mr. Ware's first printed statement issued to the public was as follows:—

"October, 1888. New early-flowering Chrysanthemum of special merit. I have much pleasure in drawing your kind attention to a new early yellow flowering Chrysanthemum, flowering now, and thus grandly filling up an awkward gap which the early frosts have made in taking away outside flowers, such as Dahlias, Asters, and the like. This variety was selected last year, and has this season proved itself quite permanent, and will, I think, with-

out the shadow of a doubt, prove to be identical with the variety which was awarded a first-class certificate by the Royal Horticultural Society on September 11th, 1888, and by the National Chrysanthemum Society on September 12th, 1888. Unfortunately at that time my plants were not in good condition, being somewhat later than those exhibited, so that I was unable to compare notes very fully; the flowers, however, of both sports have been shown to some of our leading Chrysanthemum experts, and they unreservedly assert that the two plants are identical. I have given it the provisional name of Golden Fleece (syn. 'Mrs. Hawkins'), and shall be very happy to send a bloom to any of my customers who would like to see it. The following is a description of it: Another superb sport belonging to the Madame Desgrange section. The colour is of a most intense mellow golden hue, with nothing to approach it amongst the early flowering varieties already in cultivation, quite distinct from, and altogether eclipsing the sulphury yellow of G. Wermig, and flowering about one month later, thus connecting the early flowering with the late varieties. It partakes of all the good qualities of the Madame Desgrange family, but in some soils it is a matter of some 6 inches dwarfier than the other members of that section; it flowers in September and October."

Some complaints seem to have been urged against this circular, and in the spring of 1889 the special trade offer of Chrysanthemums was issued in which appeared an illustration and description of "Mrs. Hawkins" with no reference to the "Golden Fleece," and the same omission was noticeable in the spring catalogue published shortly afterwards. Following this came another Chrysanthemum circular in which "Golden Fleece" was substituted for "Mrs. Hawkins" with the same illustration. In the meantime, Messrs. Hawkins & Bennett had commenced proceedings against Mr. Ware, and having reserved their entire stock for later distribution, contended that their intended sale had been damaged owing to the defendant having adopted the title of their variety, which they also maintained was quite distinct from that sent out from Tottenham. It was ultimately resolved, however, to submit the case to arbitration, Messrs. William Paul, R. Ker, and Steel being appointed to adjudicate in the matter, Tuesday last, September 10th, being the date chosen, when the case was heard in Chambers at 64, Chancery Lane, Mr. Grain appearing for the plaintiff and Mr. Loehnis for the defendant.

Numerous witnesses were called, and it was brought out in the course of evidence that the same sport has appeared in no less than four places. First it was noticed in Mr. Heath's nursery at Southgate, and from this stock Mr. Ware subsequently obtained three "stools" in exchange, under the condition that it was not to be sold before the autumn of 1888. From the same stock Mr. Ware had 500 cuttings early in 1889, and Messrs. Hawkins & Bennett bought twelve old stools in February of the same year. In 1887 Messrs. Laing & Sons of Forest Hill obtained a sport in their nursery of the same character, but did not send it out because their stock was insufficient, though a plant was shown for comparison with the others to prove their identity. Mr. Billingham of South Norwood secured a sport of the same character from G. Wermig in 1887, and also exhibited a plant bearing large flowers, but somewhat older than the others, and consequently a little paler in colour. The evidence of the numerous experts called proved that these were all practically one variety, and several instances were given of identical sports occurring about the same time in different collections of plants.

The next question to be settled was whether it was justifiable for one person to adopt the name of a variety for which another exhibitor had obtained a certificate, and the identity of the varieties being determined this became a comparatively simple matter. It was the general opinion that no other course could be adopted, that the award of a certificate stamped the variety as distinct under its special name, and any other title must be sunk under the accepted one as a synonym.

Many questions were asked to ascertain what was the commercial value of certificates, or the object in awarding them, if others could share in the advantages conferred, and it was

admitted by all that the only special value these awards possess is when the exhibitor of a variety holds the whole of the stock, as he can then command the market and the best price obtainable. In the case of sports in the hands of several people, the usual method is for one to purchase the whole, or to come to some agreement respecting the distribution at the same time, and instances were cited in support of this. The Japanese Carew Underwood, a bronze sport from Baronne de Prailly, was sent out simultaneously by two firms. Lord Wolseley, incurved sport from Prince Alfred, which was in the hands of two private growers, was purchased and sent out by one firm. A third example was afforded by Mrs. H. J. Jones, which was obtained by two nurserymen; one who had a small stock being awarded a certificate, and the other with a larger stock immediately took advantage of it by placing his plants in the market. Granting a certificate in the case of the new French varieties, which may be in the nurseries or gardens of a dozen persons, distinguishes the variety only and confers a general benefit upon all in the trade who have it, and in advertisements or circulars it is customary to indicate those varieties which have been so honoured.

The award of the arbitrators is not yet announced, but it will, no doubt, provide a fair settlement of a troublesome dispute; and though it may be in some respects regrettable that it could not have been arranged without having recourse to law, the case will establish a needed precedent.

METHODS OF RENOVATING FRUIT TREES.

ONCE more the time has arrived for important work in the fruit garden to be commenced, and for taking the first active steps towards carrying out contemplated additions to the stock of fruit trees already in cultivation. About the need for or wisdom of renovating innumerable old, or comparatively old, trees there cannot be two opinions, but when we come to the methods to be adopted in carrying out this wise measure there is less unanimity among the authorities.

Regrafting: partially worn out tree has often been recommended as a good means of re-invigorating it. There is no doubt that Apples will grow on Pear stocks, or *vice versa*. There are a few varieties of Apples of extra robust habit, but as a rule Pears are quite as vigorous, and if the former are grafted on to Pears it will only be for a short time that an improvement in the tree's health will last. This regrafting trees, whether with the same class of fruit or not, is, as far as complete renovation is concerned, a mere "flash in the pan," or, in other words, is certain to end in failure. For the first three or four years the grafts or young branches grow strongly, and so they would if the branches were cut hard back and allowed to grow again, but directly the trees arrive at a serviceable size they quickly collapse; at least, such is my experience. There is very much to be said in favour of regrafting vigorous trees of inferior varieties with superior sorts, this being a ready means of very greatly improving the value of an orchard, but something more than grafting is required in the case of all nearly or quite worn out trees. There may be a few instances where a change in the character of the head of a tree may be of marked advantage, clean healthy branches taking the place of those much cankered or stunted in growth, but as a rule it is below the surface of the ground where there is most need for remedial measures. Especially is the case where many trees are grown either in an orchard or cultivated garden. The roots from much isolated specimens can and do ramble widely in search of fresh food, but this is not often available for orchard trees. Those in cultivated gardens are not so far out of the reach of what they most require, but as it happens the roots of these are driven downwards by the spade or fork, and the roots will not long be in a poor or cold subsoil without most injurious effect upon the top growth. This brings me to that portion of my subject which ought just now to be especially important to gardeners and fruit growers generally.

Root-lifting and root-pruning, for one must accompany the other, are the very best remedial measures that can be adopted both for re-invigorating old trees and for increasing the productiveness of any that are naturally too luxuriant in growth. It is only those trees well furnished with root fibres that are constantly of a fruitful habit, and as deep running roots form few or no fibres the trees they support are either very unhealthy, or else they produce little else but sappy wood growth. Deep root action is the greatest evil that can befall a tree, and if the roots could be kept in an

active state near the surface there would be no necessity to root-prune young trees to make them fruitful, or old ones to re-invigorate them, a liberal top-dressing of good farmyard manure being all that the latter would need every second or third year. In some instances if grafted trees were also heavily manured before they had made much progress, and kept regularly supplied with it, valuable trees might quickly take the place of exhausted old ones, but lifting the roots and relaying these in quite fresh soil is a surer, and, as a rule, the more effective measure. There are plenty of trees that are not worth expending so much trouble over, but I always counsel that undue haste be avoided by those who are disposed to destroy trees that have been so many years in attaining their full size. Young trees are usually from six to twelve years before they produce many fruits, whereas an old tree can be restored to a most productive state in the course of two or three years.

It is possible to be over-zealous even in this direction, as I and many others have found out to their cost. The work may easily be commenced too soon and done too thoroughly in one season, several years necessarily elapsing before the trees recover from the very severe check given them. Several large Pear trees we partially lifted and root-pruned five years ago are only just recovered from it, the fruit produced this season only now attaining something like its full size. No fixed date can be assigned for making a start, so much depending upon circumstances. If the trees are root-pruned before the wood is well matured and the leaves have plumped up the buds they are liable to flag badly, and shrivelling will follow. Frequent syringings and temporary shade in bright weather will partially prevent flagging, but it may yet be insufficient to prevent shrivelling and a very great check to the tree's top and root growth. It is certainly advisable to lift and root-prune while yet the leaves are green, but this season, unless the present bright weather lasts, they will be later in doing their work and falling, and I should not advise the remedial measures being started before the middle of September, the end of that month or early in October being quite soon enough in some cases.

It is a very risky proceeding to wholly lift a large old tree, and it had far better be done piecemeal, or one half this autumn and the other next year. In this case it is also safer to commence operations somewhat earlier, or as soon as the crop that may be on the tree is gathered. A wide trench should be opened far away, or, say, not less than 8 feet from the stem of the tree, one half of the tree being gradually undermined, and the roots carefully preserved till the tap or deep running roots immediately below the bole are reached. Most of the stout roots must necessarily be cut through, but they ought to be preserved to as great a length as possible, and all should have their broken ends clean cut over and then relaid in a horizontal position very much nearer the surface, a liberal quantity fresh turfy loam, crushed bones, and burnt soil or charred garden refuse. If this is done well many fresh root fibres will be formed this autumn, or at any rate the wounds will be callused over, and "root buds" be formed. There will most probably be a marked improvement in the productiveness and quality of the fruit during the first season following root-lifting and pruning, a complete cure being effected by the completion of the work in the autumn.—
W. IGGULDEN.

LINARIA ANTICARIA.

SEVERAL of the species of perennial *Linarias* are well worthy of cultivation and of more attention than they have hitherto received, and among these the comparatively new *L. anticaria* is not the least worthy. I call it comparatively new, as so far as I am aware it was only introduced by the trade about the year 1884, and does not appear to be very widely known. As originally introduced, the flowers are described as white with a flush of lilac and an irregular dark brown or purple spot near the throat, and delicately veined. The variation of seedlings from this description is, however, already so marked that it is highly probable that great variation exists in the native habitats of the plants, as it is hardly conceivable that so many seminal varieties could have been produced in the short time since the plant was introduced. Among my plants raised from seed sown last year there are no fewer than eight varieties mostly fairly distinct. Had it not been for an unfortunate accident to the larger number of the seedlings there would almost certainly have been other varieties, as a friend, out of a very few seedlings, had another distinct variety—a buff ground with purple markings. I have saved a quantity of seed, and as the plants are largely frequented by the bees I have little doubt that some new shades of colour will present themselves.

I do not know that details of the various markings would be

welcome to the readers of the Journal, although I have carefully noted these for future reference, but two or three of the most noteworthy may be of interest. One of the most beautiful is a white ground with bright yellow spots near the throat, the top lined and tinged with bright lilac, spur canary, distinct clear white marks below the spots near the throat. Another is also white with very faint lines and faint spots of yellow near the throat, and is without lilac tinge. This variety was admired by a lady florist as a "beautiful dwarf white Antirrhinum." Another has the spurs yellow and white and the remainder of the flower lilac-purple with deeper lines and spots near the throat. The other variations differ more or less from any described, and all appear worthy of preservation in the rock garden or border of choice dwarf hardy plants.

The habit of the plant makes it suitable for rockwork or for raised stone edgings. It forms a neat tuft of about 6 inches in height, composed of many stems of glaucous, alternate blunt leaves bearing terminal clusters of flowers. These bloom in succession, and a good plant is in flower for some months at a stretch. It appears to prefer a light warm sandy soil well exposed to the sun, and it is doubtful if plants will stand the winter on cold or heavy soils, but a few seedlings might be raised annually or cuttings kept in a cold frame through the winter. On my soil, which is very light, strong plants seemed to suffer little, but weak ones succumbed to the slugs, which were unusually numerous last winter. In one garden further inland all the plants succumbed to the winter, while in another in the same town the only plant in the garden survived. *L. anticaria* is easily propagated by seeds, cuttings, or division, and while I would carefully warn all that it is not a showy plant, I can as surely recommend it to those who can appreciate quiet unobtrusive beauty in flowers, and who are willing to take some little care of plants which are only of doubtful hardiness.—S. ARNOTT.



LÆLIA JONGHIANA.

THIS very little known and beautiful species flowered for the first time in this country in 1873, and it is thus described—Rhizome very stout, creeping, with remarkably thick root fibres. Pseudo-bulbs $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, approximate, narrow, ovate oblong, compressed, green, clothed with a white membranous appressed sheath, that ends in a short point, and is usually split on one side; a short outer boat-shaped sheath also envelopes the base of the pseudo-bulb. Leaf sessile, short, 3 to 5 inches long by $1\frac{1}{2}$ to $1\frac{3}{4}$ of an inch broad, broadly oblong; tip rounded (rarely acuminate according to Mr. Luddemann) or emarginate, very coriaceous indeed, deep bright green and shining; scape stout, much shorter than the leaf, one to two flowered. Flowers 4 inches in diameter across the petals, which as well as the sepals and convolute body of the lip, are of a bright amethyst colour. Sepals linear-lanceolate, acute. Petals larger and broader than the sepals, broadly elliptic, oblong, obtuse. Lip convolute; lateral lobes very shallow, and, as well as the short emarginate midlobe white, with crisped and waved minutely toothed margins; disk of the body of the lip white, with seven parallel, slender, undulate, golden yellow ridges, which are not prolonged on to the midlobe; column slender, not winged. It blooms during the spring months. Native of Brazil.

LÆLIA PRÆSTANS.

A lovely species, of dwarf habit, sometimes confounded with *L. pumila*, from which, however, it may be readily distinguished by the larger flowers, which are wonderfully thick and fleshy. It seldom exceeds 6 to 8 inches in height, and thrives best when kept upon a block of wood and suspended near the glass. Pseudo-bulbs fusiform, 3 to 4 inches high, bearing a single oblong, acute, coriaceous dark green leaf, which is 4 to 6 inches long. Flowers terminal, solitary, 4 to 5 inches in diameter, very thick in texture. Sepals oblong, acuminate, $1\frac{3}{4}$ inch long, by scarcely 1 inch in breadth; petals ovate oblong, obtuse, ending in a point, about 2 inches long and $1\frac{1}{2}$ inch broad, like the sepals deep rose, in some varieties rosy lilac or light purple, and very thick and fleshy in texture. Lip three-lobed, lateral lobes rolled round the column, extremely thick and wax-like, the whole margin and front deep rich purple, throat yellow, with a few elevated lines on the disc; the reverse side of the labellum is rosy lilac. It usually blooms about the months of October and November, but sometimes it will bloom

in early summer, make a new growth and flower for the second time, in the autumn. Native of St. Catherine's Island, Brazil. 1857.—G. T.

HOLMSKIOLDIA SANGUINEA.

THE *Holmskioldia* represented in the accompanying illustration is the only species of the genus yet introduced, and is by no means common, although it has been grown in this country for upwards of a century. It is an evergreen shrub growing about 3 feet high with deep green cordate leaves. The flowers are crowded on the ends of the shoots in dense racemes 6 to 8 inches in length, and are bright scarlet. Being from the East Indies, *H. sanguinea* enjoys an abundance of heat and moisture, and thrives best if kept in a stove temperature. It is a charming plant when well grown. Cuttings strike readily in the propagating pit if put in some light sandy soil. Well drained pots should be



FIG. 30.—HOLMSKIOLDIA SANGUINEA.

used, and a bellglass or handlight placed over them. When they are rooted they are potted singly in peat and loam of about equal proportions, giving them a shift into larger pots as they require it. They soon make good sized plants, and will produce an abundance of bloom during the autumn months.—G.

THE NATIONAL DAHLIA SHOW.

SEPTEMBER 6TH AND 7TH.

THIS year being the one hundredth anniversary of the introduction of the Dahlia into England, an opportunity arose of introducing a fresh feature into the annual Show of the National Dahlia Society at the Crystal Palace, and it was taken advantage of in an interesting and effective manner by forming a "centenary class," fully referred to in the report. The Show itself was of much the usual character, and of perhaps about the usual merit; but comparisons made from recollections of former years are not easy. The names of Messrs. Turner, Cheal, Keynes, Williams & Co., Humphries, Rawlings, West, Glasscock, and Boston are a guarantee for good quality, and these, with many others,

competed in the various classes. Collectively considered the Show was an excellent one, and particulars of it will be found appended.

The Centenary Class.—This was open to all, as such a class should be, and prizes to the value of £15 were offered. It may be well to quote the schedule in order to give a clear idea of what was expected:—"Collection of Dahlia blooms to occupy a length of staging not exceeding 24 feet; no restriction as to varieties or types, nor as to the method of staging or grouping, quality and general effect to be the leading features. Moss may be employed, and Dahlia buds and foliage may be introduced, but no other kind of foliage may be made use of." It may be said at once that this class unquestionably added a feature of interest to the Exhibition. Moreover, large collections of blooms, composed of all the known forms of these brilliant flowers, must be of greater interest to the general public than ordinary classes of any one section. The Centenary class was looked forward to from its novelty, but a similar one would perhaps not be unwelcome as an annual fixture. On the occasion under notice six beautiful collections were staged. The imposing display of large double forms, the free light masses of single varieties, so valuable in large groups of flowers, and the distinct forms of the Cactus or garden kinds produced a delightful effect. A large and extremely beautiful collection from Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, was awarded the first prize. Along the front were stands of Decorative and double blooms. At the back was a bank of singles, comprising many well-known varieties, flanked on each side by groups of Pompon and Decorative blooms. The singles gave lightness and grace to the whole group, the Cactus varieties also contributing good support, and the blending of groups and colours throughout was admirable. A totally different arrangement from Mr. T. S. Ware, Tottenham, was placed second. This was arranged in a series of banks, the central group being composed of Decorative varieties, with groups of singles on each side of it, and pyramidal masses of doubles at each end, the spaces between being occupied by several single varieties, and such species as Zimapani, velvety purple; Mercki floribunda, white; and Glabrata, blush. Messrs. Paul & Son, the Old Nurseries, Cheshunt, were placed third, a position that hardly did justice to their beautiful group. In front were boxes of double and Decorative varieties; at the back bunches of single Pompon and Decorative forms were intermingled. There was quality and beauty of arrangement in this fine group. Messrs. Keynes, Williams & Co. were fourth. Mr. Turner and Mr. Such of Maidenhead were the other exhibitors.

Nurserymen's Classes.—The first of the five classes devoted to nurserymen was for seventy-two blooms, Show and Fancy, not fewer than thirty-six varieties, and not more than two blooms of any one variety. This is not an easy task to fill, and four exhibitors were as many as might be expected. Mr. C. Turner, the Royal Nurseries, Slough, achieved a creditable victory. The Slough blooms were not conspicuously large, but in fresh, bright condition, and well finished. The following varieties composed the stand:—Back row: Clara (very beautiful), Rev. J. Goodday, Sailor Prince, Grand Sultan (2, the first a noble flower), Mrs. Gladstone (2, not quite so good as usual perhaps, but clear and fresh), Harry Keith (2), Seraph, Mrs. J. Downie, Robina (2), Mrs. Langtry, Prince Bismarck, a seedling, Crimson King, Ethel Britton, Colonelist, Prince Bismarck, Maud Fellowes, Diadem, Chas. Wyatt, and Eclipse. Middle row: Sunrise, Florence, Burgundy, Miss Cannell, Jas. Cocker, Chas. Wyatt, Nellie Cramond, Mrs. Jeffard, Mrs. Foster, Jas. Stephen (2), Purple Prince, John Bennett, Clara, Richard Dean, R. T. Rawlings (2), Diadem, Geo. Rawlings, J. N. Keynes, Eclipse, Nelly Cramond, Imperial, and Hy. Eckford. Front row: Mrs. Henshaw, Geo. Dickson, Sunbeam, Ruby Gem, Herbert Turner, Glowworm (2, very fine), John Bennett, Rev. J. B. M. Camm (2), Imperial, Hope (2), Henry Turner, Joseph Green, Hy. Eckford, Mrs. S. Hibberd, Bendigo, Geo. Rawlings, Mrs. Jeffard, Prince of Denmark, Matthew Campbell, Ruby Gem, and Sunbeam. Messrs. Keynes, Williams & Co., Salisbury, were second. Their flowers were on the whole somewhat small, but they comprised several noteworthy examples; for instance, Mrs. E. Mawley, Jas. Cocker, Thos. Hobbs, Wm. Rawlings, and Mr. Glasscock. Mr. Boston, Carthorpe, Bedale, Yorks, came third with a fresh, bright, well-coloured but uneven lot of blooms. The fourth prize went to Messrs. Rawlings Bros., Romford. There was one other lot.

Forty-eight blooms, distinct, were required in the next class, in which four collections were discoverable. Messrs. Keynes, Williams & Co. improved on their previous position by taking first place with a very good and even stand, the flowers faultless in point of finish and condition, though not large. Harry Keith, James O'Brien, Crimson King, Maud Fellowes, Buttercup, Mrs. E. Mawley, and Clara were remarkably handsome examples. Mr. Turner was placed second, his flowers being small; Messrs. Rawlings Bros. third; and Mr. M. V. Scale, Sevenoaks, fourth. Mr. J. Walker, Thame, Oxon, won with thirty-six, not less than eighteen varieties, and amongst a grand lot of flowers James Cocker, Harrison Weir, Harry Keith, Mrs. F. Foreman, and Purple Prince were remarkably fine. This was one of the most meritorious stands in the Show. The second prize fell to Mr. Geo. Humphries, Kingston Langley, Chippenham, who also staged well, but there was a slight roughness observable in some of his flowers. The third prize went to Messrs. Saltmarsh and Son, Chelmsford, and the fourth to Mr. C. Hockney, Stokesby, Yorkshire. There were two other stands, the whole forming a really excellent class.

There were four stands of twenty-four, distinct, Mr. Humphries winning. His blooms were not perfect in point of finish, but good in size and colour, the best being William Rawlings, Crimson King, Mrs. Sanders, and Ethel Britton. Messrs. Saltmarsh followed with Frank

Pearce, James Cocker, and Shirley Hibberd amongst their best flowers. Mr. Walker was third, and Mr. S. Mortimer, Farnham, fourth. Messrs. Cheal & Sons, Crawley, had the best stand of twelve. Mr. J. R. Tranter, Henley-on-Thames, was second with a neat lot; Messrs. J. Gilbert & Son, Ipswich, third; and Mr. Salmon, West Norwood fourth.

Amateurs' Classes.—Five well filled classes represented the amateurs' contribution, commencing with one for twenty-four blooms, Shows and Fancies intermixed. It was a good beginning, as eight stands were in competition, the Judges' inspection resulting in a well-earned victory for that excellent grower Mr. J. T. West, Cornwallis, Brentwood, who staged in his well-known form. The following represented his skill:—Back row: Rev. J. Goodday, Mrs. Gladstone, Harry Keith (a splendid flower of great size and perfect finish), R. T. Rawlings, Wm. Rawlings, Miss Cannell, Prince Bismarck (very fine) and J. T. West. Middle row: Ethel Britton, Jas. Cocker, Rev. J. B. M. Camm (good), Shirley Hibberd, Dorothy, Jas. Stephen, Mrs. David Saunders, and John Henshaw. Front row: J. W. Lord, Mrs. Langtry, Prince of Denmark, Mrs. Shirley Hibberd, King of the Purples, Mrs. George Rawlings, Willie Garrett, and Frank Pearce. These were a smooth, clean, well finished collection. The second prize blooms came from Mr. Thos. Hobbs, St. Mark Road, Lower Easton, Bristol, the best being Harry Keith, Wm. Rawlings, Mr. Glascock, and Hugh Austin. A veteran grower, Mr. Hy. Glasscock, Rye Street, Bishops Stortford, came next, his flowers being very fresh but a little uneven, and Mr. W. Mist, Ightham, Sevenoaks, was fourth.

The amateurs again showed well in the class for twelve distinct Show blooms, eight competing. Mr. A. Ocock, Havering Park, Romford, showed G. Rawlings, Harry Keith, R. T. Rawlings, and Ethel Britton in capital condition with other neat blooms, and was placed first, but only after a close struggle with Mr. T. Anstiss, Brill. The latter's blooms were larger, but also somewhat rougher than those of his rival, the best being a fine bloom of Purple Prince and a very neat example of Jas. Cocker. Mr. Mist came third with a stand of fair average merit, and Mr. S. Cooper, Chippenham, was fourth. There were five stands of six, Mr. H. Heeremans, jun., Chippenham, showing very neat examples of Colonelist, Rosetta, Hope, Mrs. Gladstone, Mrs. W. Slack, and Burgundy for first place. He was followed by Messrs. G. T. Cronk, Orpington; J. G. Fowler, Woodford, Essex; and W. Seaman, gardener to J. Biggs, Esq., Brentwood, in the order of their names; all good stands. Twelve Fancies were best shown by Mr. Glascock—Viceroy, Mrs. J. Downie, and Henry Eckford being his best flowers. His only opponent was Mr. West, and the latter was placed second, although some distance in the rear. The paucity of competition here was made amends for in the class for six, in which eleven competed. Mr. Ocock was first with a splendid stand, comprising Rev. J. B. M. Camm (a grand flower), Peacock, Frank Pearce, Mrs. Saunders, Mrs. N. Halls, and Hy. Eckford. Mr. S. Cooper showed small, but very fresh, bright blooms for second place, and he was followed by Mr. H. H. Steer, New Eltham (third), and Messrs. T. Hobbs and H. Heeremans, jun. (equal fourth).

Open Classes.—As regards general effect these were the most noteworthy classes in the Show, as they embraced the single, Cactus, and Pompon forms. The first, however, were for Show and Fancy Dahlias grouped by colour. For six blooms of any two dark varieties, Show type, three blooms of each, Mr. Walker was placed first with Jas. Cocker and Geo. Rawlings, both remarkably fine. Messrs. Keynes, Williams & Co. were second with Wm. Rawlings and Harry Keith; Mr. Hobbs third with Willie Garrett and Prince of Denmark; and Messrs. Rawlings Bros., Romford, fourth with G. Rawlings and Rev. J. Goodday. There were seven other stands. Mr. West won with light blooms having grand examples of Mrs. Gladstone and Queen of the Belgians, but which afforded little contrast of colour; Messrs. Keynes, Williams & Co. being second with Mrs. Gladstone and Georgina; Mr. Glascock third with Maud Fellowes and Mrs. Gladstone; and Messrs. Saltmarsh fourth with Mrs. Gladstone and Mrs. Slack, the former thus being represented in every stand. There were six others. Tipped flowers were best staged by Messrs. Keynes, Williams & Co., who won with capital examples of Peacock and Mrs. Saunders; Mr. Glascock being second with Mrs. Saunders and Miss Browning; Messrs. Saltmarsh third with the same varieties as in the first-prize stand; and Mr. Walker fourth with Mrs. Saunders and Fanny Start. Ten competed altogether. Messrs. Keynes, Williams & Co. won with striped flowers, staging Rebecca, and Mrs. J. Downie; Mr. West following with Frank Pearce and Hy. Glasscock; Mr. Humphries third with Dorothy and John Cooper; and Mr. Glascock fourth with Frank Pearce and Mrs. J. Downie. Ten competed.

Decorative Dahlias were finely shown by Messrs. Keynes, Williams & Co., Juarez, Mrs. Hawkins, Empress of India, Amphion, Honoria, Professor Baldwin, Asia, Lady Marsham, Prince of Wales, Henry Patrick, Panthea, and Wm. Darvil, all good blooms admirably set up in bunches, won them the first prize in the class for twelve. Mr. Scale followed, the beautiful variety Charming Bride being very noticeable in his stand. Messrs. Cheal & Sons took the third place, and Messrs. J. Laing & Sons, Forest Hill, the fourth. There was one other stand.

There were eleven stands of six, forming a very beautiful display. Mr. Glascock won with Panthea, Amphion, Lady Brassey, Empress of India, Mrs. Hawkins, and Beauty of Brentwood, in admirable condition. Mr. West was second with a scarcely less beautiful stand, Mr. T. W. Girdlestone, Sunningdale, third, and Mr. Ocock fourth. Pompoms were also a very beautiful feature, arranged in bunches with their own leafage. Mr. Turner had a splendid stand of twenty-four varieties, comprising Fairy Tales (new, soft primrose), Admiration, Cleopatra, Isabel, Hamlet, Lady Blanche, Ariel, and Lavinia (back row); Oberon,

Juno, Leila, Rosalind, E. F. Jungker, Vivid, White Aster, and Golden Gem (middle row); Eccentric, Darkness, Whisper, Mabel, Little Duchess, Mikado, Rosalind, and Favourite (front row). Messrs. Keynes, Williams & Co. were a capital second, Messrs. Cheal & Son third, and Messrs. Laing & Son fourth, one other competing.

Messrs. Gilbert & Son won with twelve neat bunches but somewhat crowded, and Mr. Humphries was second, the remaining prizes going to Messrs. Henshaw and Burrell, Cambridge. Mr. West was first with six, Mr. Glascock second, Mr. Apthorpe, Cambridge, third, and Mr. S. Cooper fourth, several others competing.

Messrs. Cheal & Son are famed exhibitors of the lovely single flowers, and they achieved a ready and most meritorious victory in the class for twenty-four. The varieties were Mrs. Kennett, Albert Victor, White Queen, Amos Perry, Jas. Seobie, Queen of Singles, Mrs. Coninck, and W. Irving (back row); Duchess of Westminster, Enchantment, Sunningdale, Mrs. Rose, Ida, Cetewayo, W. C. Harvey, and Excelsior (middle row); Duchess of Albany, New Year, Lady Montefiore, Formosa, Mrs. Henshaw, Hugo, Victoria, and Miss Ramsbottom (front row). The second prize was withheld, but Messrs. Gilbert were third. Mr. Seale won with twelve, a most charming stand, beautifully set up, Mr. Burrell being second with large but coarse and crowded flowers. Mr. Girdlestone won with six, fresh blooms of good size, not too large, and in excellent condition. Mr. Henshaw was a close second, Mr. Glascock third, and Mr. E. Mawley, Berkhamsted, fourth.

Messrs. Cannell & Sons, Swanley, had a very extensive and beautiful collection of Dahlias, not for competition, comprising all cultivated forms. First-class certificates were awarded to Messrs. Keynes, Williams & Co., for Show Dahlias Alice Emily, Duke of Fife, and Majestic; to Messrs. Cannell & Sons for Cactus Dahlia Mrs. Douglas; to Mr. Turner for Pompon Dahlia Cleopatra; to Mr. T. S. Ware for single Dahlia Miss Jefferies; and to Mr. T. W. Girdlestone for single Dahlias Gruppo, Lady Helen, and Yellow Perfection.

DAHLIA CENTENARY CONFERENCE.

ON Friday afternoon, September 6th, the National Dahlia Society held a Conference in the Crystal Palace, when several papers were read upon the history and culture of the Dahlia. Shirley Hibberd, Esq., took the chair at 3 P.M., and after a few introductory remarks read his paper upon the "History of the Dahlia," which is given *in extenso*. He was followed by Mr. Harry Turner, Mr. J. West, and Mr. Cheal, who gave much information of practical value, as will be gathered from a perusal of their papers.

HISTORY OF THE DAHLIA.

[A paper by Mr. Shirley Hibberd, read at the Crystal Palace, September 6th.]

ALTHOUGH the history of the Dahlia as a garden flower extends over only one hundred years, it is an eventful history, and the historian may more easily indulge in profuseness of detail than compress within moderate limits the points that are likely to prove at once the most useful and interesting to the participants in this Centenary Conference. Happily there are not many knotty questions presented by the facts on record; but these facts have been variously presented, and in glancing at the existing histories, so-called, of this flower, I find much confusion and contradiction, and often a sad misapprehension on the part of the historian of the bearings of the particulars at his command. Thus in the "Gardeners' Magazine" of October 9th, 1880, will be found two short histories of the flower, one from Mr. Max Deegen, of Köstritz, the other from Dr. Comstock, whose "Illustrated Botany," published at New York in 1847, contains much valuable information of special interest to florists. Max Deegen begins by saying that the Dahlia was introduced to England in 1787; to France in 1802; to Germany in 1804. It cannot be allowed in an assembly solemnly convened for the glorification of the Dahlia that the promoters are too late by so much as two years. No; if Max Deegen and the "Horticultural Magazine" of 1839, which appears to be his authority, are in the right, it will be but proper for me, as President, to dissolve this assembly and declare the centenary as a thing silently accomplished two years since, leaving us nothing in that way unless, perhaps, we might justify our meeting by making arrangements for the bicentenary in 1987. It will be my duty to abolish Max Deegen, and put this celebration on a firm historical foundation.

We cannot move a step without referring to the hooks. There appears to be no earlier description of the Dahlia than that by Francisco Hernandez, physician to Philip II. of Spain, in his four books on the plants and animals of New Spain, published in Spanish in the year 1615. In this work our flower appears under its Mexican name of *Acotli*, and the notice is particularly interesting, for two species are figured, *D. variabilis* and *D. crocata*, and both have single flowers. We appear thus to secure somewhat of a triumph for the florists, but, unfortunately, in a work founded on that of Hernandez, and published at Rome by Vitalis Mascardi in 1651, there occurs a figure of a double flower, but whether it was obtained as such direct from the domain of Nature, or through the garden from the hands of man, there is no sufficient record, and we may not, therefore, say that the florists had commenced operations at so early a date. We speak of this as a double, but the drawing is so bad that it may be single. It is of importance to observe that we lose the Dahlia for 130 years, when it turns up again in 1787, not, as in the former case, for the special advantage of Spaniards, but this time for Frenchmen in a most exclusive sort of manner. Nicholas Joseph Thierry de Menonville was sent to America to secure the cochineal insect. He was to act on the principle of Iago when he said, "put money in thy purse," for the plant and the insect were both

to be secured, and they were secured, with a few other things that were worthy of the labour. M. Menonville published in 1787 a treatise on the culture of the Nopal and the "education" of the cochineal, and therein described the Dahlias he had seen in a garden near Guaxaca, which, he says, had large Aster-like flowers, stems as tall as a man, and leaves like those of the Elder tree. Thus the deceptive date is obtruded on the history, but there is no record of the Dahlia being brought into England in 1787, but after a lapse of two years we hear of it again as actually introduced to this country by a lady whose name should this day be remembered with gratitude as a generous contributor to our great garden of florists' flowers.

In the year 1789, Vincentes Cervantes, director of the Botanic Garden at Mexico, forwarded seeds of the Dahlia to the Royal Gardens at Madrid, then under the direction of Abbé Cavanilles. The Marquis of Bute was at this time Ambassador from England at the Court of Spain; and the Marchioness, who cherished a true sympathy with floriculture, obtained some of these seeds, which she cultivated in pots in a greenhouse, but failed to keep them beyond two or three years. The Marchioness of Bute was in correspondence with the professors at the different botanic gardens in Europe, and thus had opportunities for acquiring, and perhaps of diffusing, information on such matters, and her loss of the plants may therefore be accepted as in some part testifying to the prevalence of misconceptions as to the requirements and characteristics of the Dahlia. In 1802 an English nurseryman, John Fraser, of Sloane Square, a collector of American plants, obtained from Paris some seeds of *Dahlia coccinea*, which flowered in a greenhouse in 1803, at his nursery, and supplied a subject for the plate in the "Botanical Magazine," t. 762, which secured to the plant a proper place in the English garden. Thus it happens that in Aiton's "Hortus Kewensis" the Dahlia obtained a place, two species and three varieties being entered in the second edition, published 1813.

The Abbé Cavanilles named the plant in honour of M. André Dahl, a Swedish botanist, author of a work on the Linnean system, published in 1784, and Cavanilles figured it in his "Icones et Descriptiones Plantarum," the publication of which was commenced at Madrid in 1791. Comstock tells us that it was Humboldt who sent the seeds to Madrid in 1789, but Humboldt had not at that time set a foot on the American continent, for he was pursuing his studies under Heyne and Blumenbach from 1787 to 1789, and he did not visit America until February, 1800.

For ten years the Abbé Cavanilles managed to keep his Dahlias, and perhaps I might say that in that time he actually improved them, for one of them produced semi-double flowers in October, 1790; and in the January following was figured in the "Icones" as *D. pinnata*, which was the early name of our *D. variabilis*, and thus we fix the date of the first doubling of the Dahlia in Europe as occurring in the first year of its flowering at Madrid. The variety named *rosea* was very soon afterwards established at Dresden, for in the year 1800 it was sent from Dresden to Berlin with the *D. pinnata* and *D. coccinea* already cited, the entire collection of Dahlias of that date consisting of these three only. In 1802 Cavanilles sent them to the Jardin des Plantes at Paris, and to M. Decandolle at Montpellier, and thus the flower was fairly started on the way to become known throughout Europe.

In the year 1799 Humboldt and Bonpland left Madrid in the ship Pizarro for the American continent, and commenced those explorations which have secured for them as scientific travellers immortal renown. In descending from the table land of Mexico towards the Pacific coast, they found the Dahlia in a prairie between Areo and Patzcuaro at a height of 5000 feet above the level of the sea, a fact which at once explained the failures of Lady Bute and others to grow it as a plant needing much heat and a constantly close atmosphere under glass. Kew had obtained the plant, and had lost it as a consequence of stewing or roasting it, as moist or dry cookery might happen to be in favour. At Paris the same thing had occurred, for M. Andre Thouin, director of the Jardin des Plantes, placed his Dahlias in a stove, the tropical idea haunting him, as apparently all others had been haunted, so that it was in the nature of a miracle that the plant escaped the killing treatment to which it was so generally subjected. Many of the most useful plants have passed through a similar ordeal, one of the most notable examples being the *Aucuba japonica*, which proved a most troublesome customer, always at death's door while confined to a hot prison, but was found capable of taking care of itself when turned out and left to contend with the elements. In 1804 M. Thouin published a treatise on the subject in the "Annales du Museum d'Histoire Naturelle," in which he presented engravings of this new favourite; but the best he could say for it was that he had persuaded it to live.

This appears to be the proper place for a brief discourse on the name of the plant. We call it colloquially the Day-li-a, but as it is named after Dahl the vowel sound should be broad, *Dah-li-a*; but custom is against its use in that way, and to avoid appearing pedantic most of us adhere to the *Day-li-a*. It should be understood that this name has priority of all others, and we are justified by history no less than by custom in using it. The genus of the same name instituted by Thunberg represents a group of Witch Hazels—plants far removed from the subject of our present attention. The genus *Dalea*, named after Dale, the friend of Ray, is in the Fabaceous order, and also far removed from our noble Mexican flower. A competing name, *Georgina*, ran Dahlia a race for a season, for Professor Willdenow of Berlin, owing to a misapprehension, felt the necessity of suppressing the name adopted by Cavanilles, and of substituting *Georgina* in honour of Professor Georgi of St. Petersburg, which a writer in "Revue Horticole" declared, was

adopted by the English cultivators to rob Dahl of his honour and exalt in his place that of George III., King of England, in whose reign the flower was introduced. The name Georgina was much used in Germany and England, and so late as 1832 I find it entered in an index to "Loudon's Gardeners' Magazine." That, as you all remember, was the year of the Reform Bill, and a reform was effected in this matter, for in the year following H. Reynard, Esq., President of the Beverley Horticultural Society, proposed to reinstate the original name, and thereupon the reform was accomplished. In "Loudon's Gardeners' Magazine" for 1834, page 607, will be found a record of the event, with the following declaration by Mr. Loudon:—"Our authority for adopting the name Georgina was Mr. Sweet; but Mr. David Don has proved to us that the name Dahlia was applied one year before that of Georgina. The name Dahlia, therefore, will in future be used by us."

The year 1804 forms the second epoch in the history of the Dahlia. In that year it was figured in the "Botanical Magazine" from Mr. Fraser's specimens that flowered in Sloane Street. Seeds were again sent from Madrid, this time by Lady Holland to M. Buonaiuti, librarian to Lord Holland at Holland House. This gentleman raised all three varieties, and they flowered satisfactorily and were figured in the botanical periodicals of that day. From this time the cultivation tended in the direction of the exhibition that is here to-day, for the end of all who possessed the plant was to effect some improvement, the great aim being the production of double flowers. Now, although I have spoken of one of the early figures as apparently showing a semi-double flower, this must have been transitory, for in 1806 the gardeners at Malmaison and St. Cloud were striving after double flowers, and appear not to have got beyond the three varieties they began with—namely, *coccinea*, *purpurea*, and *crocea*. But in 1812 M. Donkelaar of the botanic gardens at Louvain, Belgium, raised a number of plants which all produced single flowers. The next year he made a further essay, and obtained some semi-double flowers; and again he operated and secured flowers perfectly double, and the honour appears beyond all doubt to be due to him of launching the Dahlia on the tide of time as a fine florists' flower, one quality of which must be a capability for infinite variation.

This, we will say, brings us to the year 1814, which we may term the third epoch in the history of the flower. It had become established at Erfurt and Leipzig simultaneously with its establishment at Louvain in 1812, and Haage had raised a flower that was more than single if not quite double. It was admired, however, chiefly for its violet colour, which was at that time new to the Dahlia. In 1814 the continent was thrown open by the approach of the Allies to Paris, and the British amateurs found Dahlias in plenty in French gardens, many of which soon found their way to this country, and were taken charge of with enthusiasm by the hopeful florists. Amongst the French amateurs who at this time cultivated this flower with assiduity mention should be made of M. Lelieur of Sèvres, near Paris, and the Comte de Vandes, who imported French varieties into England, and communicated specimens to Dr. John Sims, for the two figures published in the "Botanical Magazine" in the year 1817. It has happened often in the history of the arts and sciences that they have had birth on the continent of Europe, and have reached us when somewhat advanced; but that having made a beginning the people of this country have outstripped their foreign benefactors in a lively interpretation of the Baconian maxim, "The true end of science is to enrich human life with useful arts and inventions."

We must keep in mind that about the year 1815 double flowers were beginning to appear; but I shall invite your attention to the figure of Dahlia *superflua*, the "crimson fertile-rayed Dahlia" that appears in the "Botanical Register" for 1815, for it represents our "Show" Dahlia, the *D. variabilis* in its best form as a single flower not far removed from its wild Mexican form certainly, but in a grand condition as regards its rich crimson colour, its great spread of narrowish elliptic rays, and the small but brilliant golden centre. Such a flower would now be prized, and would make a new class of singles. If history is once more capable of repeating itself, surely this original Dahlia that we have improved out of existence will be restored to us. Sydenham Edwards, the then editor of the "Register," was a man of taste with few prejudices, and we may regard this figure as representing the Dahlia that was considered the best of that day.

From this time the history rises to a kind of stately march, the flower acquires extensive popularity, and as autumn approaches the whole country appears to glow with Dahlias, for tens of thousands are exhibited, and the talk of all the world is about them. The excitement that has prevailed in recent years in connection with exhibitions of the Chrysanthemum is as nothing when compared with the frenzy of forty years during which the Dahlia was the greatest of all the exhibition flowers. From 1820 to 1860 was the term of the highest popularity of the Dahlia. In the "Annual Dahlia Register" for 1836 we find the favourites advertised by the following traders:—Brown of Slough; Cooe of Milford, near Salisbury; George Glenny of Isleworth (who reports that he selects from upwards of 3000 double flowers); John Harris of Upway, Dorset; Heale & Son of Calne; James Levick of Sheffield; Bernard Saunders of Jersey; Henry Skillman, Marlborough; George Wheeler, Warminster; the prices ranging from 3s. 6d. to 21s. per plant, the average for established varieties being then about 5s. to 3s. The petals of the period were generally less in size than the flowers of the present day, and often had pointed petals that were boldly cupped and far away from the smoothness and density that now prevail. One of

them, Brown's Glow-worm, was the precursor of the Cactus series, and comes near to Juarezi in all its characters.

From the year 1832 the advance in floral qualities was rapid and decisive. There was no conflict between "North and South" as to the judging. The type of flower in fashion thirty years ago is admirably shown in the treatise on "The Dahlia," by Robert Hogg, published by Groombridge, 1853, for herein we find the true precursors of the splendid show flowers that now rank highest in the esteem of cultivators; the petals are no longer pointed, but rounded and smooth, and so even with the periphery of the flower as to secure for it from every point of view an unbroken outline, while the crown is higher and more refined, and in respect of size the flower comes very near to the present standard. In this work Mr. John Edwards, President of the National Floricultural Society, at one time collaborator with Mr. E. S. Dodwell, pronounced Yellow Standard the finest flower he had seen until he obtained from it a variety named Mrs. Hansard, which is figured in Hogg's book as a flower of a soft primrose colour, with white tips, reminding me of the present Mrs. Saunders. Mr. Edwards reports that he sold this for £5 to a Dahlia trading firm, known as "The Metropolitan Union," respecting which it would be out of season for me to give any particulars.

It is an interesting question how many species of Dahlias we may have in cultivation. Taking the species reported in the order of their appearing, we have Dahlia *coccinea*, otherwise *D. frustanea*, the barren-rayed Dahlia, introduced to Madrid, and figured by Cavanilles in his "Icones." The figure of this in "Botanical Magazine" of 1804 (t. 762), displays such a flower as we may now find in any garden where seedling singles obtain attention, and it is one we should now discard as too small for any purpose. The more famous *D. variabilis* or *D. superflua*, the fertile-rayed Dahlia, was probably also one of the three secured for the first Madrid set, and as figures of it abound I select three only for special mention in connection with the earlier history. "B. M." of 1817 contains two figures, one of a single red flower with broad petals, coming near to a show flower of the present day; the other a double purple of small size, with narrow pointed florets, and such as we may now speak of as in its day a quite promising flower. A grand figure of the single *D. superflua* is that in "B. R.," t. 55 above referred to, and the date 1815 doubtless shows that it was obtained from Paris. The plant introduced by Fraser in 1802 was *D. frustanea*, the barren-rayed Dahlia, which in common with the others had been lost to cultivation. These two appear to be equally variable, and are probably not specifically distinct, so that we may encourage the belief that the Dahlia, as a show flower, is of pure descent, its variations being the consequence of a potentiality of its own and not of any mixing of species or hybridisation.

In 1837 was introduced from Mexico *D. Barkeria*, a pleasing form, probably not specifically distinct from the foregoing. In 1840 *D. glabrata* was obtained from Mexico, and figured in "B. R.," t. 29, and "B. M.," t. 3878. It is smooth and distinctly lobed in the leaf, and has a neat and pleasing habit, being smaller every way than *D. variabilis*, of which it is a variety. The noble *D. imperialis* is certainly distinct, and withal its imperial qualities, it does not now concern us more than to record that it first flowered in the Zurich garden in 1862, and has not as yet become established as a garden favourite anywhere in Europe through lacking the first conditions of manageableness and seasonable display. To our dear old friend, the late John Salter, of Hammersmith, belongs the credit of having first taught the Imperial Dahlia how to behave as a garden plant.

Between the great days of the Dahlia and its eclipse for ten years that closed with the institution of this Society, it was seen how little to be trusted were great corporations, having universal aims, with the interests of such a flower. From the beginning of the world until now it seems that the florists have had cause to complain of the indifference of such representatives of horticultural omniscience as the Royal Horticultural, Royal Botanic, and Royal Manchester Societies, the Crystal Palace, the Alexandra Palace, and the organisations for great floral fêtes, and the diffusion of light from and for the garden in all our great centres of light and leading. The practical outcome of the long-cultivated discontent is seen in the National Societies for the representation of the Tulip, Auricula, Carnation, Dahlia, Chrysanthemum, and other popular favourites. The Crystal Palace became a kind of home for the Rose and the Dahlia, in consequence of the appearance of these flowers at seasons when the great public were apt to be moved by pleasant weather to recognise, and as we sweetly say "patronise," the glories of the garden. The Dahlia shows at the Crystal Palace in a long run of years were delightful as bringing together Dahlias, Gladioli, Hollyhocks, and other autumnal flowers; but they came to an end in the year 1869, simply because, as the managers reported, they had ceased to pay. Thereupon was formed the "Metropolitan Society for the Encouragement of Florists' Flowers," the principal promoter of which was our excellent friend and faithful florist the Rev. H. H. D'Ombraim. This Society held its first Exhibition in the Crystal Palace on September 7th, 1870, and though Dahlias were the leading subjects, there were also good displays of Roses, Hollyhocks, Asters, and Gladioli. The same Society was in action in the Crystal Palace in 1871 and 1872. In 1873 there was no show, for arrangements had been made for holding a show at the Alexandra Palace, but the place was burned to the ground, and it was impossible to hold a Dahlia show amid the ruins. In 1874 there was no exhibition. In 1875 the Metropolitan Society held an autumn Show in the Alexandra Palace, and that was its last act and deed, although the dying speech was not then pronounced; in fact was never pronounced, for the thing died quietly.

But the Dahlia did not die, nor were the ten years of eclipse a loss to its history, for, in truth, while under the cloud and obscured from the public vision, it was like any other honest flower that darkness has fallen upon, preparing itself for the light of a new day. In that wonderful fifteenth chapter of the first epistle to the Corinthians, St. Paul, seeking for a familiar image of an occult fact, says, "that which thou sowest is not quickened except it die." It will not be irreverent to perceive somewhat of an illustration of this appeal to Nature in the eclipse for a season and ultimate recovery of the Dahlia in the sunshine of public favour, because it was in the mind and heart of man that both took place. There was seen upon the horizon of the world of flowers the original Dahlia of 1789; the simple Mexican flower known as the Single Dahlia suddenly acquired popularity, as though its beauties were perceived for the first time, just as some particular star may become visible and obtain universal attention that would not have been seen except through the accident of an eclipse. The single Dahlia lighted us through the darkness until the florists' Dahlia emerged from the gloom, and a way was prepared for a new study and a new love of this magnificent flower, one result of which is that doubles and singles now divide empire between them, as in the celestial order of the earthly seasons the month of May, the "sweet of the year," is ruled by Gemini the twins.

Concurrently with the revival of the single flowers as subjects of special attention, there came into the floral firmament a quite new star known as the Cactus Dahlia, and this, having given birth to a numerous progeny, the Cactus family may be said to form a constellation for us, perhaps, as beautiful as the Pleiades, but already exceeding them in number. Indeed, I have seen as many as twenty varieties of the Cactus group in one border. It was on the 3rd of September, 1880, that the present star arose on our horizon. Upon that date Mr. H. Cannell, of Swanley, presented at the Fruit Show in Alexandra Palace the first flowers of Dahlia Juarezi seen in this country. This distinct and beautiful variety is not a descendant of Brown's Glow-worm, as may appear to be suggested by a remark I have made, but is an independent and original introduction from Mexico in the year 1872, by Mr. J. T. Vanderberg, of Juxphaar, near Utrecht, with whom it flowered in 1873. Messrs. Ant. Roozen, of Overveen, obtained it, and supplied roots to Mr. Cullingford of Kensington, who thus became the introducer of the noble flower to England, and through him it passed into the hands of Mr. Cannell, who secured for it a place of high rank in public favour. It was figured and its history recorded in the *Garden* newspaper, May 7th, 1881, since when there has become established a considerable family of Cactus varieties, greatly to the advantage of our gardens and exhibitions.

To return to the cold current of dates and circumstances: in 1876 it was seen that the Metropolitan Society for the Encouragement of Florists' Flowers had closed its brief career, and the Dahlia was in the position of virtue in a wicked world where none could deny its beauty, but there were not many who would fight in its defence. If I were asked to give an explanation for the collapse of this thing I should say that its great size made a small thing of it; the aim was to gather into one body a number of elements that certainly were not and are not discordant; but they are without any necessary principle of cohesion, and it appears to be impossible for cultivators of Tulips, Auriculas, Carnations, Dahlias, Hollyhocks, and Chrysanthemums—to name a few subjects only—to pull together and share in a common fund with combined energies for the promotion of flowers that demand for their full measure of justice individual enthusiasm and sympathy, in place of the corporate omniscience measured with red tape that is an inevitable characteristic of societies formed for large and general purposes. These considerations tend to show that special societies are absolutely needful in floriculture, and the National Dahlia Society, which came into existence in the year 1881, and held its first Show in the Crystal Palace, September 8th and 9th, 1882, needs no better justification than a plain record of the facts that immediately led up to its formation. May its shadow increase! I beg pardon, it casts no shadow, for, like the sun, it is a source of light. May its light shine strong and far, and prove continuous, for the advantage of this nation that has so readily yielded to the persuasions of town life, and would doubtless perish of inanition were the horticulturists ever to slacken in their efforts to render town life and trade pursuits endurable by the disguising of their harsh lines and discordant colours with the wreaths of flowers that seem to bring the breath of Paradise into our midst in aid of bodily health and spiritual joy. Alas! alas! at the graveside we are accustomed to say in the midst of life we are in death. Here, amid these glorious flowers, I feel compelled to show the money-box, for as lovers must dine—and the soul of poetry in some measure lives on vulgar pen and ink—and perhaps in its poverty has to steal paper—so the Dahlia needs pecuniary support, and I ask you all to join at once the National Dahlia Society, and I would now exact a pledge from every old member to bring in a new member, and every new member to bring ten at least, for when a man enters a thing of this sort his connection is like young humanity, and should readily take contagion of his example.

THE SHOW DAHLIA.

[By Mr. Harry Turner.]

THE subject of this paper being only to treat upon Show and Fancy Dahlias as show flowers, I shall confine my remarks strictly to this subject. The first double or semi-double flowers were obtained about the year 1814 by Mr. Donkelaar of the Botanic Gardens, Louvain, and from three plants which bore double flowers many varieties were raised,

and were imported into this country during the winter of that year, the number of Show and Fancy varieties steadily increasing until we find sixty varieties were cultivated by the London Horticultural Society in the year 1826. Various shades of colour and the quality of the flower gradually improved until the year 1832, when the most decided advance was made by the raising of Springfield Rival, a crimson flower described as superb; and in the year 1841 the number had so increased that one grower claimed to have in his garden 1212 double varieties.

After that year many Show and Fancy flowers were raised, and in the year 1840 we find then some popular flowers were exhibited—viz., Sharp's Beauty of the Plain in eighty-nine stands, forty-four of which were first prize stands. Cox's Deliance, a yellow flower, was also exhibited sixty-seven times in forty-one first prize stands. Two of the best flowers in 1841 being Conqueror of the World, a yellow ground slightly tipped, and Rival Revenge, a yellow flower very much ribbed, and which would be discarded from any stand of the present day. Another of the same date, Burnham Hero, having a very bad outline and rough open petals. In the next year 1842 Whale's Atila was sent out, a lilac ground with a faint crimson stripe, and also Beauty of Wakefield, a large loose petalled variety with a Picotee edge of lilac, and Princess Royal (Hudson's), a rough flower. The next flowers of importance were Beeswing, a dwarf growing variety with crimson flowers, which was exhibited in all the winning stands in 1845; Essex Pride was also good at this time. Amongst the new and improved varieties in 1846 was Cassandra, Magician, Marchioness of Cornwallis, a blush white, not unlike our present Mrs. Gladstone in colour, but not approaching this latter variety in quality, and Princess Radziwill, a white ground flower tipped with rose, but with a long pointed petal. About this time the flowers had so much improved upon former varieties, that only one variety exhibited in the first prize stand of the same number of blooms in 1846 was exhibited six years previously, and that variety was Springfield Rival. The next year, 1847, brought out Scarlet Gem and Berryer, the latter a very dark flower, but with a very ribbed petal; the next variety of note was Shyllock, a scarlet flower that obtained fourteen first prizes and first class certificates; in the same year Toison d'Or, a French variety, obtained some notoriety. In the next year Mr. Seldon was introduced, a very constant flower, which remained in cultivation for fifteen or sixteen years. In 1851 Barmad, raised by Mr. Holmes, was the most successful flower; it was a tipped variety, after the style of our present Mrs. Shirley Hibberd, but not so constant or good in quality. Mrs. Hansard of this year, a Fancy variety, yellow tipped with white, was a great addition to this class. Bob, a scarlet variety, was about this time grown very successfully, it was a very tall growing variety. The next year, 1853, was an important year; John Franklin, Queen Victoria, and Miss Caroline were some of the principal introductions.

The outline of the flower about this time was much improved, and in 1856 a standard flower, which has been grown to the present time, was raised by George Holmes, Esq.,—viz., Lord Palmerston. After this came Lord Derby, Leah, Earl of Pembroke, George Rawlings, Harriet Tetterill, John Wyatt, Lady Gladys Herbert, Mrs. Henshaw, Umpire, a chaste flower, but rather small; Fanny Sturt, Gem, Sultan, and Queen Mab, most of these varieties being grown up to the present time. The great improvement which has taken place in the Show and Fancy Dahlia in the last twenty-five years is in the outline, well-shaped petal and perfect centre, the flowers of the present day requiring little or no dressing in comparison to the time it took thirty years since to prepare a stand of Dahlias for exhibition. The improvement in the flower has also had some effect on the habit, and the Show varieties of the present day are not nearly so tall in habit as those grown twenty-five years since.

I might say a few words as to the preparation of the plant to produce show flowers, although the subject has been described in another paper under the heading of cultivation. The plants intended to be planted out to produce show flowers should be transferred from the small 5-inch pots (in the early part of May) into 48's or 32's, and placed in a cold frame until planted out early in June. Nearly all the varieties make strong plants, and succeed well if grown from cuttings, but a few varieties such as Bendigo, Mrs. Foster, Burgundy, Herbert Turner, &c., which are very double, or are apt to come with green centres, are better grown from pot roots or old divided ground roots. The plants should be planted 5 feet by 4 feet apart: if in a border, arranging for the tallest flowers at the back. After the ground has been squared out dig holes about 2 feet square and the same in depth—into each hole put a spadeful of light potting shed or other soil mixed with a little manure—this is to give the plant a start—break up the soil taken out of the hole before returning it, and after the plant is planted lightly tread when replacing it. A light stick will hold the plant for a few days, and when planting is finished put a stout stake 4 to 5 feet high to each plant, and tie the stem of the plant to the stake rather loosely to allow for the stem to swell in due course. As soon as the main stem throws out laterals add four smaller stakes to secure the side branches to keep them well tied out, so that plenty of light and air are admitted to the plants during growth.

There is no general rule for disbudding, every variety has to be studied in this respect—to commence to disbud some coarse-growing varieties, such as Champion Roll'o, Royal Queen, &c., as soon as the buds appear would make the flowers coarse the whole season, whilst all varieties should be sparingly disbudded at first by taking only one bud away, and then within three weeks of the exhibition the grower can

choose the bud which is perfect and will be likely to be in flower about the date of the exhibition, and remove all the other buds. Should the variety be a thin and small flower then remove all the side shoots down from the bud to the stem; but should the variety be inclined to become coarse only thin sparingly until a week or so before the show. This is most essential to a Show Dahlia. The soil should never be allowed to be dry at their roots from the time of planting, and I think I might here state that after the plants have been staked and tied out the surface of the soil should be forked over and the plants top-dressed with a good dressing of stable manure, this will keep the roots moist and encourage the roots to the surface to feed. Should the weather be hot and dry the plants should be sprinkled overhead every night in addition to the watering at the roots, which at first should not be excessive, but sufficient to keep them moist and growing. Heavy watering should be commenced three weeks before the exhibition, as the plants will be sufficiently large to take plenty of water, and should be continued until a week previous to the show, the last week lightly sprinkling round the plants to keep them fresh and moist; too much water a few days previous to the show has a tendency to cause the flowers to shoot their petals after being cut for exhibition.

To protect the buds from earwigs, caterpillars, green fly, thrips, &c., a muslin bag 6 inches by 8 is best, and should be placed over the bud as soon as it shows colour. The bag should be fastened with bast or raffia round the stem of the flower, and must be taken off every morning to see if any insect has by chance got into the bag, and the flower examined to see if it is growing properly, and as the flower progresses the bag should be lifted every morning, so as not to check the growth of the flower. Shades are best made of a stout wire frame with a thick canvas covering, and should the weather prove very hot a few leaves of Rhubarb should be laid on the shade over the full grown flowers. Shading should be commenced a week previous to the exhibition. Some tipped or light edged flowers are much improved by a flower pot (24) placed over them on a table a week or ten days before a show, with a piece of glass over the hole in case of rain.

The stands on which the flowers are exhibited are usually painted green, and are made of one uniform width—viz., 18 inches, and should be supported by legs 9 inches at the back and 3 inches in front, holes being made to receive the flowers 6 inches apart, and for a stand of twelve flowers, 24 inches long. In selecting blooms for exhibition place deep circular flowers at the corners of the stand, and introduce as much diversity of colour as possible, selecting quality before size, a large coarse flower often spoiling what would otherwise have been a good stand. The perfection in a show flower should be fair size, globular with good depth, the petals short and cupped, smooth on the edge, the outline a perfect globe, the centre high but not above the face of the flower, the centre should be close, and the petals radiating from the centre should expand by degrees; types of the most perfect flowers being *Mrs. Gladstone*, *Bendigo*, *Joseph Green*, and *Sunbeam*. The colour of a self should be bright and clear, of one uniform shade from the centre to the back petals; if an edged flower the marking should extend round the edge of each petal.

I may here name the best twenty-four Show Dahlias in cultivation at the present time:—

Maud Fellowes (Fellowes), French white, tinted and shaded with purple, perfect centre, and a grand show flower, very constant.

Clara (Rawlings), rosy peach, a large constant flower, of good petal and outline.

Constancy (Keynes), yellow ground, deeply edged with lake, large.

Flag of Truce (Wheeler), white, occasionally tipped lilac, fine.

George Rawlings (Rawlings), very dark maroon, a full size flower, fine.

Goldfinder (Fellowes), yellow, tipped with red, large, finely shaped.

Herbert Turner (Turner), French white, with a soft tinge of lilac; a noble show flower.

Imperial (Keynes), deep purple, with a pretty shade of lilac; large, and of splendid form.

James Coeker (Keynes), purple, large, fine form, constant.

James Vick (Keynes), purplish maroon, full and symmetrical, fine.

John Neville Keynes (Keynes), yellow, of fine form.

Joseph Green (Keynes), bright crimson, full centre and good outline.

Lustrous (Turner), deep scarlet, almost a crimson, fine outline and good petal.

Miss Cannell (Eckford), white ground deeply edged with purplish crimson.

Mr. G. Harris (Rawlings), crimson-scarlet, a deep full flower, fine form, and constant.

Mrs. Gladstone (Hurst). This is admitted to be the most perfect show variety yet raised. The colour is a very delicate soft pink, in form a model, and very constant.

Mrs. Harris (Harris), white ground, lilac edge, a very fine flower.

Mrs. Langtry (Keynes), creamy white, edged with crimson, full size, good form.

Prinee Bismarck (Fellowes), puce, shot with purple, full size, remarkably constant, and of the finest form.

Prinee of Denmark (Fellowes), very deep maroon, shaded with crimson, very effective.

R. T. Rawlings (Rawlings), clear yellow, fine form.

Sunbeam (Fellowes), clear buff, with a beautiful outline, good and constant.

T. J. Saltmarsh (Rawlings), yellow, deeply edged with red, fine stout cupped petal.

William Rawlings (Rawlings), crimson-purple, fine.

FANCY DAHLIAS.—The previous remarks made with regard to Show flowers are applicable to the Fancy class with a few exceptions, one of which is that many varieties of Fancies require very spare thinning or disbudding, as the Fancy varieties are very easily made coarse by over-thinning. The tipped varieties in this section are much improved by the flowers being put under a pot for a week previous to the show.

Appended is a list of the best twelve Fancy varieties now in cultivation:—

Mrs. John Downie (Turner), orange, tipped with scarlet; a large flower, of fine form and perfect centre.

Charles Wyatt (Keynes), deep rose, flaked with crimson, fine.

Frank Pearce (Rawlings), rose, striped crimson, fine form, constant.

George Barnes (Keynes), lilac, striped crimson, a fine flower.

Henry Eckford (Rawlings), yellow or light buff striped with scarlet.

Henry Glascock (Keynes), buff, crimson stripe, fine.

John Forbes (Keynes), fawn, striped with maroon, fine.

Mrs. N. Halls (Rawlings), bright scarlet, tipped with white, good form.

Mrs. Saunders (Turner), yellow, tipped with white, fine form, very constant, good habit.

Peacock (Turner), dark purple-maroon, distinctly tipped with white.

Rebecca (Keynes), lilac, striped with crimson, large; very constant.

Rev. J. B. M. Camm (Keynes), yellow, flaked red, very large.

CULTIVATION OF THE SHOW DAHLIA.

[By Mr. J. T. West.]

I do not attempt to tell the trade growers anything but what they are fully conversant with already. The purpose of this paper is to throw out a few practical suggestions for criticism that may ultimately benefit some of my brother amateurs; also to incite others to take up the culture of the Dahlia. I do not propose touching upon the propagation of the Dahlia, as I consider that to be of secondary importance, as probably most amateur cultivators depend upon the trade grower to supply plants in the spring. I will further add that I will give my own experience in growing for exhibition, which, of course, is of a very limited character.

In the cultivation of the Show Dahlia the first thing is to make up one's mind not to be baffled by the many obstacles that stand in the way ere success is attained. Probably no florist's flower has more enemies than the Dahlia, nor requires more constant attention. Let none think that Dahlia growing is merely a hobby that can be attended by merely a casual glance round at the plants. It means hard work and worry day and night, and unless this is done no success will be achieved, and the flower will be given up in disgust. On the other hand, no flower pays more liberally for proper attention and care than this flower. In the first place, let those who propose growing the Show Dahlia in the future make up their minds as to the number they are likely to grow, so that they can prepare the ground during the winter months by deep trenching and digging in plenty of manure. Let the soil be laid up in a rough state, so that the frosts, rains, and snows may pulverise and fertilise, and help to keep the vermin down. This I consider far better than to begin in April or May, as if suddenly remembering there is such a flower as the Dahlia, and commencing then to dig and manure to a great extent. Really, in my opinion, this is courting failure. Though the Dahlia is a great feeder, I do not consider it wise to give a lot of manure for it to come into contact with, as that has a great tendency to make the plant grow rank, and throw coarse and rough blooms, thus spoiling all chance of success. The plan I follow is, after the autumn digging, and some time before planting, to dig out holes for each plant, and put in say half a peck of good old rotten manure, thoroughly mixed with the soil. This I find sufficient to give the plant a good start, and to support it until it commences to flower.

If a grower does not grow his own plants it is best to give his orders in to the trade as early as possible, so as to insure sufficient of the sorts required, for many sorts are shy, consequently the stock of the best is soon sold. Early in May the plants will be dispatched to their various destinations; probably little sturdy specimens in thumb pots. When received put into a warm frame or house for a few days until they are rooted well, then transfer into 5 or 7-inch pots in good loam and dung with a little sharp sand. Replace them in the frame or house until they are growing; then admit plenty of air to keep them sturdy and strong and to prevent them drawing up, which is very undesirable at any time. By the end of May the lights can be drawn off all day and put on again at night, with air at the back, until two or three days before planting out, when the lights can be removed entirely.

The first week in June is a good time to put the plants out in the ground or in the holes prepared for them, taking care that the ground is not too wet, or it is likely to give the plants a check and to cake round the roots. A good distance, where one has plenty of room, is 6 feet from row to row and 5 feet from plant to plant in the rows. Of course, all are not so favoured as to have so much room, but it pays in the long run, for the plants grow stronger and more robust; besides that, it is more convenient to get amongst them, especially when the weather is wet. But we cannot draw a hard line in distance of planting, but must go according to the room at our disposal. When they are planted plant some Lettuces between them; these will act as a decoy for slugs, they will eat them instead of the Dahlias. What they leave will come in for the table, as they are sure to be crisp and good. It is also advisable to put a little lime or soot round each plant, as prevention is better than cure.

In a few days they will commence growing, and will want their

stakes, which should be as strong and neat as possible, taking care to give long stakes to the tall growers, and *vice versa*. As the staking proceeds have some raffia ready to tie the plants to the stakes, also a basket filled with small pots, with a little moss or hay inside, so that they can be put upon the top of the stakes as a trap for earwigs. The pots should be taken off every morning or evening to see if there are any earwigs lurking inside the moss. Have a piece of stick in the hand, and kill all intruders. This is the quickest and most effective way; better, I think, than shaking them out, as many escape by that method. The course above recommended has its disadvantages, for the earwigs smell very unpleasantly; but still the Dahlia grower is not as a rule very fastidious so long as his plants are doing well. While I am speaking of insect plagues I might as well mention that if the weather is very dry the black fly often makes its appearance at the end of June or early in July. This is a sad scourge, and taxes our patience as much as anything. Syringing of an evening with tobacco water or quassia is a good plan, also dusting the affected plants with snuff or tobacco powder; either will certainly act as a check upon them.

By the middle of July it will be necessary to thin some of their branches, as too much growth prevents the production of fine flowers. This operation must be regulated by the nature of the variety; some are apt to come large and coarse, from such we must cut away very little, or perhaps not any. The smaller varieties must be cut somewhat severely. When this is done, put side stakes to the plants, one to each branch, to prevent wind breaking them. I find four side stakes and one centre generally sufficient. A good mulching of dung, straw, or anything that will prevent the evaporation of the moisture that is now necessary to the Dahlia must be given before the plants get too large. This plan is also useful for another reason; that you can walk upon the ground better, as it will not pick up so, or cling to the feet to convey loose soil to the paths, which it would do after a heavy rain or watering, for now the plants will want plenty of water; hard-eyed flowers, such as George Rawlings or Prince Bismarck, will want an extra supply.

Many varieties will begin to show their buds; these must be picked off, unless wanted for very early shows. These early blooms weaken the plants, and are mostly poor, even if left on. Early Dahlia blooms are really not wanted in the garden, for they are badly shaped, and with nothing special in colour to recommend them. This remark refers to Show varieties only, not to Cactus or Pompon Dahlias. If the centre buds are picked off the side branches will soon begin to show buds. These can be left, and as soon as they grow as large as a pea, can be thinned to one on a branch, or rather sub-branches, for the plants by this time will have broken into perhaps ten or twelve branches, and you may have one bud to each. In many varieties perhaps the plant had better be thinned to six or eight branches to get the blooms fit for the exhibition table. Such varieties as Bendigo and King of the Purples may be cited in illustration; while varieties like T. J. Saltmarsh, John Standish, or Mrs. Langtry, may be allowed to carry twelve or more. Many amateurs find a difficulty to know what buds to leave in thinning, but I have found from the time the bud first shows itself to the time it is ready for cutting, a month is just sufficient. I find sprinkling with a rose-can very helpful after a hot drying day, as it assists the plants to recover the loss they have sustained during the day.

When the florets of the buds are beginning to show the earwigs begin their depredations in earnest. What is more trying than to find of a morning promising buds spoilt by being gnawed all round the edges by these pests? A piece of wadding tied loosely round the stalk of the buds will be a great check, also liquid indiarubber put on the stalks of the buds; this, however, is rather dangerous if used too freely, for the sun sometimes heats the rubber, and burns through part of the stalk. But then any remedy must be tried. Many place the buds in bags made of muslin, but I do not particularly like them, as they often cause the florets to crowd one another when they are fully out. The best flowers are those which have come out in the natural way with the softening influence of the dews, and no check to interfere with Nature's plan of perfecting beauty. The grower must make up his mind to lose many buds under any circumstances.

About twelve or fourteen days before the Show it will be advisable to "pot" up a few buds—that is, place an inverted 32-size pot over them; this is done by having a stake put in the ground, and a piece of wood a little larger than the pot, with a slit in it for the stalk of the bud, the wood to be lifted up to the height of the bud, and then made secure to the stake. The pot will get warm by the sun's rays, and will be a little forcing house for the bud. Take care to stop all crevices, as the earwigs will otherwise think the pots are put there for their benefit. Should the buds look as though they will be too forward after four or five days take the next forward buds, and do as in the former case; but be very careful over those that have been taken out of the pots, as with care many will be very useful. Put some wadding round them, and shade or otherwise try and keep them. In selecting the buds choose always those with little pin-holes in them, as they always make the best blooms. There is one thing putting buds under pots will do—that is, it will make light flowers purer in colour, also tips more distinct; for instance, Mrs. Gladstone will come nearly white, and such as Mrs. Saunders clear and cleanly tipped.

As the flowers begin to come out, it will be often necessary to cover with shades worked on the same system as the boards for potting the buds. This will retard the flowers, and also protect them from damage by sun and drying winds. Take care the flowers are made secure, otherwise they will chafe. By no means let the plant suffer for water, as now it will require a lot; perhaps a weak stimulant will be required

for some sorts. But if the plants have been well looked after in their earlier stages they will do without it. Stimulants at this period often excite the plants, and cause them to throw out unshapely petals, or perhaps even to cast them all. There will not be much peace for the grower, as the blooms will require constant attention by night and day, as caterpillars and other insects will soon ravage them. Take a lantern out at night and there will be seen earwigs and other marauders busily engaged in undoing what has been done.

The morning before the show it will be wise to examine the blooms, and if there are any doubtful ones not likely to stand the full time, cut them and put in a cool and dark place without water. By this procedure many valuable blooms will be saved. Never cut when the bloom are soft, as I think they shrink up when the sun is out. Cut early in the morning or late at night, when they are stiff and fresh. It is surprising how they will open after a heavy shower or heavy dew. When cutting have tubes, eorks, and boxes all ready, so that they can be put right away without a lot of handling, as they do not improve by being pulled about. But it is needless for me to go any further, as the grower is quite conversant how to cut and stage them. I have given briefly my experiences in these few remarks, trusting they may benefit some one or more, and interest them to grow the noble Queen of Autumn, for which we are all grateful to the Marchioness of Bute for introducing 100 years ago. Let all those who would like to show their gratitude liberally subscribe to our National Society, so that the grand old flower may be still further improved and kept full in view of the British public.

POMPON, SINGLE, AND DECORATIVE DAHLIAS.

[By Joseph Cheal, Crawley, Sussex.]

POMPON OR BOUQUET.

THIS section resembles the large Show Dahlia in all points with the exception of one—that of size. Circular outline, evenness in petal, with a well-raised centre are the principal points, but the smaller the flower the better. Many of the earlier varieties appear to have been introduced from Germany, but steady progress has been made in improving the strain in this country until many of those now in cultivation are perfect little gems of beauty—small, refined, and of brilliant colours. As garden plants they are such early and abundant bloomers that they form striking objects in beds or borders. The flowers being so small and refined in character they can be used as cut flowers in almost any kind of decoration. A few of the best varieties are the following:—Admiration, Cupid, Darkness, E. F. Jungker, Eli Millard, Favourite, Golden Gem, Grace, Guiding Star, Isabel, Iolanthe, Rosalie, Little Duchess, Little Bobby, Lady Blanche, Gem, Whisper, Little Ethel.

SINGLES.

A correspondent, writing to the "Florists' Register" of 1834, on the properties of the Dahlia, says, "Our former observations on the properties of this all-attractive flower having given great satisfaction, and the opinions of many eminent growers coinciding with them in every particular, it would seem prudent to let well enough alone, and not by detailing too nicely our own notions of perfection to endanger the unanimity of feeling which pervades the fancy as to general principles." I, too, may be running a chance of endangering unanimity of feeling in the next subjects with which I have to deal by detailing too nicely my own notions of perfection. Some of the enthusiastic growers of the old Show varieties consider the re-introduction of the singles as altogether a retrograde movement. Others think that the lightness, freedom, and brilliancy of the singles are more to be desired than the more weighty doubles. Since the double form appeared at the commencement of the century such development and steady progress have taken place that they seem to have attained about the height of perfection. So perfect, indeed so excellently modelled, so superb are they as now grown, that the very perfection became almost painful, and the least flaw or irregularity became perfectly unbearable. To such a degree of excellence have they attained that there was nothing more to strive after or possible to attain; we therefore find growers retracing their steps, and returning to first principles, and setting out anew from the starting point, hence a somewhat sudden reappearance of the single type of Dahlia. From the pretty little Dahlia glabrata, introduced in 1840, and crossed with the Dahlia coccinea subsequently introduced, new forms and bright colours very soon appeared.

About the only old variety that appeared in its original form was Paragon. This was in existence in 1834, and I find it described in the catalogue of "Superb Dahlias," sold by Samuel Apply, of Doncaster, for that year. And strange to say, Paragon still holds a place amongst the twenty best varieties for exhibition. The brilliancy and variety of colour and form in the singles is now through hybridisation so great that the cultivator may, be he ever so fastidious, suit his taste and fancy in selecting from them his particular favourites. But there are certain very distinct types and forms to be desired and sought for, and Nature is here so generous that it is comparatively easy to select desirable strains or plants.

Cultivators very generally discard all flowers of a large size; these usually have a coarse appearance, and almost invariably, from the weight of the bloom, hang their heads and hide what beauty they may possess on the plant, and are, when cut, heavy, unmanageable, and useless for decoration. Therefore, flowers of medium and small size are much to be desired, and particularly those that are borne on erect, stiff stalks. As to form, the flowers should be as circular and even in outline as possible, the petals flat and even, neatly and closely fitting or overlapping each other, and well recurved. A flower of this form not only presents a

pleasing and refined appearance, but it lasts much longer when cut than star-like varieties, or those with separate petals.

Of colours, we have such a wide range that it is not difficult to satisfy the most voracious desires in this direction. In self colours and shadings we have a range from the most brilliant and decided colours to the softest and most delicate tints, with the exception of the one cardinal colour, blue. Now we find increasing numbers of varieties with striped, tipped, flaked, and spotted flowers, many of them being very pretty in the combination of colours, and some of the most decided contrasts being very striking in effect. Attention is also being paid to the selection of specially dwarf varieties, and Mr. Girdlestone, the worthy Secretary of the National Dahlia Society, has already succeeded in raising a very dwarf strain. These consist of plants about 18 inches in height, bearing abundant blossoms of ordinary size, and are likely to be very useful for bedding. Promiscuous seed sowing and raising seedling plants give as a result a great variety of subjects, and an occasional plant may be selected of superior merit; but to obtain really satisfactory results, and to secure advance in any desired direction, it is necessary to be very careful in the selection of seed, and careful and systematic hybridisation must be resorted to with definite aims to insure advance in any definite direction.

In the cultivation of the singles, do not overfeed them. Rich ground and stimulating manures will force them out of character, and produce rank growth and coarse flower. Select poor and heavy land for them, and, when planting, give them only sufficient manure close to the roots to give the plant early and rapid growth, and to carry it on to the flowering season. Then an occasional watering is all they require. Give them, in fact, the very opposite treatment to the doubles, or, in a word, feed the doubles, but starve the singles. In cutting single Dahlias always cut the flowers as young as possible, even before they are fully open. If cut thus young, and in the cool of the morning or evening, they will last for a long time. I name as a few of the best varieties in their sections:—Selfs (shaded varieties).—Albert Victor, Cetewayo, Formosa, Amos Perry, Henry Irving, Miss Linnaker, Queen of Singles, Duchess of Westminster, Alba Perfecta, W. C. Harvey, Hugo, Miss Roberts. Margined petals.—Duchess of Albany, Lady Montefiore, Victoria, Beauty of Uplands, Excelsior, James Kelway, Maude Millet, and Mrs. Conninck. Spotted, flaked, and striped.—James Scobie, Mrs. Kennett, Chrs. Laws, Scotch Lassie, and Mr. Rose.

DECORATIVE AND CACTUS DAHLIAS.

In this section we have again a new departure. The true Cactus Dahlia, Juarezi, was imported direct from Mexico. I say true Cactus advisedly, because it is about the only variety that has the narrow-pointed petal, and the whole form of the flower so nearly representing a Cactus. But this variety, with its brilliant hue and unique form, is such a decided acquisition, that it has proved the pioneer of a distinct class that now occupies a very useful position, and it has opened up a new field of enterprise to the devotees of the queen of autumn flowers. All flowers that show a tendency to the free, open, and Cactus like character of this class are eagerly sought after. The field in this direction is still open before us, and we shall doubtless see steady progress in the development of this section. What could be prettier or more useful than a good collection of Pompon Cactus, of decided colours, and miniature in size? A few of the best varieties already raised are Beauty of Brentwood, Panthea, Wm. Rayner, Charming Bride, Empress of India, Juarezi, Lady Marsham, Mrs. Hawkins, Henry Patrick, Mr. Tait, Zulu, and Lady E. Dyke.



EVENTS OF THE WEEK.—To-day (Thursday) the National Chrysanthemum Society's Show will be continued at the Royal Aquarium; also Exhibitions at Brighton, Derby, Edinburgh, and Newcastle-on-Tyne, the latter being continued on Friday. Committee meetings of the Royal Horticultural Society will be held on Tuesday, September 17th. There will be the usual auction sales at Protheroe & Morris's and Stevens's rooms.

— **THE WEATHER IN AUGUST.**—This month was changeable and wet up to the 26th, fine and bright after until the end; only one clear day and eleven bright ones during the month. Rain fell on nineteen days, total 2.92 inches. The greatest amount in twenty-four hours was 0.42 on 19th. Barometer was very changeable. Highest 30.28 at 9 P.M. on 31st, lowest 22.19 at 9 A.M. on 20th. Highest shade temperature 81° on 1st and 30th, lowest 41° on 25th. Lowest on grass 36° on 25th. Wind in a westerly direction on twenty-nine days. Garden spring running 25 gallons per minute on 31st. Harvest operations much delayed by the wet weather.—W. H. DIVERS, *Ketton Hall, Stamford.*

— **THE VEGETABLE CONFERENCE AT CHISWICK** to be held on September 24th, 25th, 26th, progresses in a promising manner, and, as might be expected, many interesting questions have arisen to demand consideration by the Executive Committee. Amongst these is one that is perhaps of primary importance. Intending exhibitors, in a few instances, desire to present collections, and to keep these intact as such. The Committee have determined that the printed schedule must be strictly followed, for in the first place this is not a competitive affair—there is, in fact, no ostensible competition—and the work of the Committees of Selection cannot be efficiently performed unless the subjects submitted are grouped in classes required by the schedule. And this is a simple matter enough, and the schedule is as definite as can be desired. For this important work of selection six Committees of the most experienced cultivators have been arranged, each of these Committees comprising men familiar with the subjects they are appointed to operate upon, both as to nomenclature and the selection of typical examples. A large Committee of Referees will supplement the labours of the working Committees, these being held in readiness to settle doubtful points, and to advise generally as the working Committees may desire. The placing of all exhibits in the classes appointed for them is not only necessary to enable the Committees to act, but to render serviceable in the way intended in the primary idea of the Conference, the final awards of certificates for these will be awarded to the subjects, and will notify recognition of purity of types as well as good cultivation, the genuineness of the several "types" and "strains" being a matter of the first importance. All entries should be received by the 21st inst. At the dinner on the evening of the 24th, at which Mr. Harry Veitch will preside, we shall hope to see a great force of horticultural talent, as it is to be in a special sense a "gardeners' dinner." Intending diners would do well to secure tickets early, by application direct to Mr. A. F. Barron at Chiswick.

— **A BEAN SHOW AT BANBURY.**—A somewhat novel exhibition took place in the Market Place, Banbury, on the 5th inst., on the occasion of Mr. Henry Deverill offering special prizes for the best twenty pods of Neal's Ne Plus Ultra Runner Bean. Something like seventy entries were received from different parts of the country, and by consent of the municipal authorities these were arranged in a line of tables in the Market Place. A very fine lot of Beans were staged in the form of long, handsome, fresh, well coloured, and symmetrical pods, and the Judges proceeded to make their awards surrounded by a considerable body of the public, who appeared to be deeply interested in the competition. Eventually the first prize of 20s. was awarded to Mr. J. Hughes, The Gardens, Eydon Hall, Byfield, Northamptonshire; second, 10s., to Mr. Coupland, gardener to Captain Benyon, Neithrop House, Banbury; third, 7s., to Mr. Wingrove, gardener to G. H. Nelson, Esq., M.P., Rousham Park, Oxford; fourth, 5s., to Mr. Nicholls, gardener to C. Gillett, Esq., Wood Green, Banbury. Six other dishes were highly commended.

— **LARGE ONIONS.**—In connection with the above Show Mr. Deverill exhibited a collection of his famous Onions, staging twelve bulbs of Rousham Park, weighing 20 lbs.; twelve of Ailsa Craig, a magnificent new variety, weighing 30 lbs.; twelve of Cocoonut, weighing 20 lbs.; twelve of Wroxton, weighing 15 lbs.; and twelve of Anglo-Spanish, weighing 18 lbs. One bulb of Anglo-Spanish measured 18½ inches in girth, and weighed 2 lbs. 12 ozs. The largest of the twelve Rousham Park was 18 inches in girth, and weighed 1 lb. 13½ ozs. In addition Mr. Deverill had a collection of examples of twenty to thirty varieties of the older varieties of Onions, which, together with the splendid examples above enumerated, it is his intention to send to the Vegetable Conference at Chiswick.

— **ACALYPHA TRICOLOR.**—This is a very useful plant for furnishing in a small state—that is, from 6 to 15 inches high. The foliage colours splendidly when the plants are grown cool and fully exposed to the sun. Young plants during the summer months are better in cold frames than in a heated structure. It will be necessary to remove the plants by the end of the month to a structure where the temperature will not fall below 50°. When good cuttings are rooted singly in small pots, and then placed into 4-inch pots and grown cool, the plants are short-jointed and the lower leaves fall gracefully over the pot and partially hide it from view. The heads of plants that have grown tall may still be rooted, and will be useful in 4 and 5-inch pots if grown on in a temperature of 50° to 55°. When this plant becomes unduly root-bound in small pots it invariably loses its lower leaves. Before this takes place the soil will become one mass of roots if the plants are

liberally supplied with water. Cuttings of young wood root so freely in heat that there is no difficulty in keeping a stock of plants.—B.

— GARDENING APPOINTMENT.—Mr. R. Pool has been appointed head gardener to R. B. Evered, Esq.

— FITTONIAS.—Good quantities of these should be rooted for furnishing during the autumn and winter. Those to be used first may be rooted singly in small pots, and the remainder in pans. When the latter are rooted tie their roots in moss and place them in boxes, filling the space between the balls with leaf soil. The plants can then be lifted out and used without potting them where large vases, the base of screens, &c., have to be filled with plants and edged with dwarf growing kinds.

— A NUMBER of well-grown plants of *ARTOCARPUS CANNONI* in 5 and 6-inch pots are highly ornamental in the stove during the winter months. Unfortunately it is not propagated with the same freedom as *Acalyphas*, and therefore it is rather difficult to prepare plants so that they will have large fully developed leaves hanging over the rim of the pots. So far we have failed to root the growing ends of plants with good foliage attached. Side shoots of young tender wood, however, can be rooted moderately free if inserted in sandy soil and kept close in the propagating box. It is not very serviceable for room decoration, and therefore the plants, when associated amongst others can be used to advantage even if the base is not well furnished with leaves. Cuttings root at almost any period from early spring to autumn. A few young plants grown with a single stem are far more attractive than one or two large plants.—B.

— WAKEFIELD PAXTON SOCIETY.—The following is the programme of meetings for the third quarter, session 1889. Meetings are held at the Society's rooms, Saw Hotel, Westgate, each Saturday evening, commencing at eight o'clock prompt:—Sept. 14th, Opening ceremony of the Paxton Recreation Ground, at three o'clock in the afternoon; Sept. 21st, "A Retrospective Glance at Gardening," Mr. G. Hemming, Doncaster; Sept. 28th, "Cabbage," Mr. J. S. Brown. (Sale of periodicals). Oct. 5th, "The Gardenia," Mr. W. Grix, Leeds; Oct. 12th, "The Germ Theory," Mr. G. H. Crowther, Royal Institution, Truro; Oct. 19th, "Manures and their Application," Part II., Mr. James Keighley, Bradford; Oct. 26th, "A Tour in Ireland," with views by oxy-hydrogen limelight, Mr. G. Webster. (Sale of periodicals). Nov. 2nd, "The Potato," exhibitions of specimens and discussion; Nov. 9th, "Gardening, and some of the Present-day Difficulties," Mr. L. Twigge; Nov. 16th, The Chrysanthemum Exhibition; essay by Mr. W. Daniels, Mirfield; Nov. 23rd, "Our Streets: How they came by their Names," Mr. H. Oxley; Nov. 30th, "A Few Notes on Herbaceous Plants," Mr. S. Hudson, Woolley. (Sale of periodicals).—G. W. FALLAS and T. GARNETT, *Hon. Secretaries*.

— MR. J. MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR JUNE, JULY, AND AUGUST, 1889. June: Mean temperature of month, 60.1°; mean temperature of the air at 9 A.M., 61.0°; mean temperature of soil at 1 foot deep, 60.6°; total duration of sunshine 206 hours, or 41 per cent. of possible duration; we had two sunless days; total rainfall, 0.58 inch; rain fell on five days; average velocity of wind, 6.3 miles per hour. A fine pleasant month, very similar to June, 1887. Mean temperature higher than any of the last fourteen years. July: Mean temperature of month, 59.1°; mean temperature of the air at 9 A.M., 60.4°; mean temperature of soil 1 foot deep, 60.5°; total duration of sunshine in month 157 hours, or 31 per cent. of possible; we had one sunless day; total rainfall 1.81 inch, rain fell on seventeen days; average velocity of wind, 7.2 miles per hour. A cool and rather showery month, with average sunshine. August: Mean temperature of month, 58.7°; mean temperature of the air at 8 A.M., 59.9°; mean temperature of soil 1 foot deep, 58.9°; total duration of sunshine in month 135 hours, or 30 per cent. of possible; we had three sunless days; total rainfall, 2.93 inches; rain fell on seventeen days; average velocity of wind, 9.0 miles per hour; velocity exceeded 400 miles on one day. A dull, cool, and showery month except the last few days, which were very fine. The fruit crop here fair, except Apples and Peaches, which are quite a failure. A good autumn bloom of Rose, in spite of the mildew, which has been worse than ever this season.

— GLOXINIAS.—Seedlings that have been grown in cold frames during the past two months will now be useful inside. Place the plants in an intermediate house, and they will quickly come into flower. It

will be necessary to protect them from bright sunshine, and weak stimulants may be given them occasionally. Ripen off gradually plants that have ceased flowering.—N. G. L.

WATSONIA ROSEA.

THE genus *Watsonia* in Mr. J. G. Baker's "Systema Iridacearum" is assigned a position between *Lapeyraisia* and *Acidanthera* in the Iris family, and he enumerates thirteen species, with six or seven varieties. Nearly all are natives of the Cape of Good Hope, and succeeding in favourable situations out of doors, but they may also be counted amongst the cool house plants that can be advantageously grown in pots or placed out in beds under glass. *W. rosea*, which has been known to

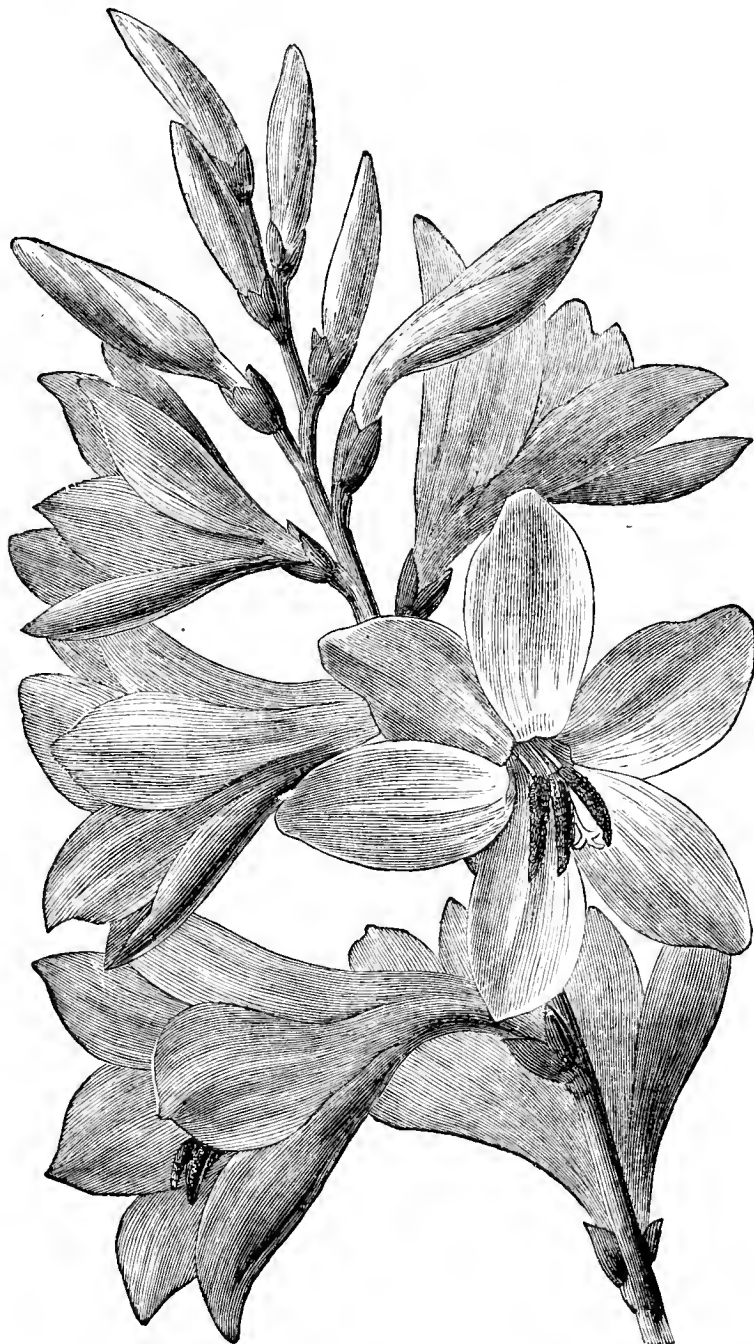


FIG. 31.—WATSONIA ROSEA.

cultivators since the beginning of the present century, is one of the most attractive species, being of strong growth, with Iris-like foliage and large, round, bright rose-coloured flowers in compact spikes. A good specimen was shown at a meeting of the Royal Horticultural Society on August 27th, when a first-class certificate was awarded to Mr. T. S. Ware.

ABOUT WASPS.

THESE have been unusually abundant this season, and have proved very destructive to the various crops, both indoors and outside. Peaches, Nectarines, Plums, and Cherries have been great attractions for them on the open walls, and in some gardens almost or quite half of the several crops have been devoured by these pests. There is considerable difficulty in warding them off from outdoor trees, as netting

of very fine mesh only when closely nailed to the wall will keep them out, and even then the smallest possible flaw in the material is quickly sought out and taken advantage of, and often after such trouble has been taken it is only on the removal of the netting that the partial or total loss of the crop is revealed to the gardener in charge. In the vinery, too, they sometimes prove very unwelcome, and if measures are not quickly taken with them the Grapes are sure to disappear with alarming rapidity. Scott's wasp destroyer is the best antidote I have ever used for use in vineries, this being applied with a feather or camel's hair pencil to the berries already attacked. One or two applications proved sufficient, for the whole of the wasps forsook the house in apparent disgust, giving no further trouble for the remainder of the season. Bottles partly filled with sweetened beer attract and dispose of large numbers when suspended on the trees or stood on the ground near the ripening fruit. Undoubtedly the best method is destroying the nests, but this cannot be done by all, and many of those who would, have not the time or tact for tracing them. My friend Mr. Gibson, Draycot, Chippenham, is the best at this I know, but it is only by persistent effort. This year over a hundred nests have been destroyed within varying distances from the garden by the use of cyanide of potassium, obtained in granulated powder from the chemist. This deadly substance may be used in a dry state or in liquid, but probably the latter is the more quickly effective. The powder may be dissolved by being placed in an open-mouthed bottle and water added sufficient for covering. A tablespoonful of the liquid poured in the passage to the nest will prove instant death to each wasp that attempts to enter or leave, as may be proved by anyone visiting the spot a few hours after the application. Unless they are exasperated by juvenile interference, the cyanide may be used at any time of the day without fear, as it only requires a moment's delay when once the whereabouts of the nest is known.

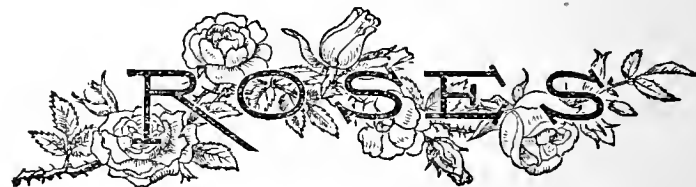
It may not be generally known how easy a matter it is to trace wasps to their nest. The gardener, before mentioned, says that by observing the direction they take on leaving a fruit tree laden with their burden for home they are sure when on wing to take a direct course, but it is not known how far they may travel, and it is only persons who have energy and time who are likely to undertake the journey. For an isolated garden in a country district the destroying of a hundred nests is a feat of no mean order, and certainly deserves mention, involving as it does a considerable saving of choice fruit, which would otherwise be destroyed by those greedy pests.—W. STRUGNELL.

CARNATIONS AT EXHIBITIONS.

I THINK that my friend Mr. A. R. Brown rather misses the point I put before your readers; besides, he is in danger of somewhat degrading the Carnation-growing pursuit by insinuating that good Carnations are grown only in respect of obtaining thereby a certain amount of prize money. I want to see lovers of the Carnation growing good flowers—the best they can afford—quite regardless of anything like a mercenary spirit. Therefore it is that I complain that the standard of Carnation blooms seen at not a few country shows is a low and unworthy one. If Carnations are grown solely as exhibition flowers, and with no higher view than that of winning some money at flower shows, then I think Mr. Brown's contention would be a correct one. But it is because the Carnation bloom at many country shows is poor, and down at a dead level of unworthiness, that I was led to pen the few lines I did in reference to this matter. It appears to me that some exhibitors fancy anything will do for the exhibition table so long as it bears the name of Carnation, even though the flowers may be shapeless masses of rough and dull-coloured petals; and judges appear too prone to encourage them in the practice by awarding prizes because the flowers are the best on the exhibition table. I look to our Carnation societies to do something in a missionary point of view to convert country Carnation growers from the error of their ways, and raise them from the level of ignorance into the higher sphere of a better Carnation knowledge. I think it is very likely prizes are kept low because the quality of the blooms placed upon the exhibition table is poor. Let growers set about producing something better—blooms more worthy of the name of Carnations—and I think the framers of schedules will not be slow to encourage and reward their efforts by increasing not only the money prizes, but also by increasing opportunities of exhibiting this beautiful flower. Good varieties are readily obtainable at a comparatively small cost. Seeing this is so, I hope judges will in the time to come raise somewhat in their mind's eye the ideal of the flower to which they award prizes. If they will do this, the work of reformation will have a fitting commencement.—R. DEAN.

EDIBLE FUNGI.—I am pleased to see that "D. G. B." (page 202) bears me out with regard to the prevailing ignorance on this subject. Although he questions the utility of my suggestion as to coloured plates I am not at all dogmatic on the point, but he in his haste to find fault falls into the very common error of neglecting to suggest something better. There were coloured plates of edible fungi in South Kensington Museum some twenty years ago, which, if memory serves me right, a member of the enigmatical majority alluded to by "D. G. B." might have safely taken as a guide. He also says that while I am loud in the praise of Mushrooms I have not a single word of praise for edible fungi. Why, the whole end and aim of the few remarks I made on the subject was with the view of obtaining better information, and my reasons were

principally that, while in this district there is scarcely a Mushroom this season, there are so many toadstools as to be a positive nuisance, in the grounds at all events; and I thought it a pity to see these collected daily and wheeled to the dung heap. At the same time I should be sorry to think that by any contortion of language it could be construed that I said there were fifty different varieties. As to the people north of the Tweed being unable to distinguish between Mushrooms and toadstools, he again errs. They look upon them as worthless, and speak of the whole class of funguses collectively as puddock stools. One of the easiest things in the world is fault-finding; one of the hardest is obtaining information. The question still remains, How is better information to be obtained?—A. C. W.



THE ROSE SEASON OF 1889.

Now that the din of battle is over, the warriors have gone into their winter quarters prepared "to fight another day," and there is a feeling in all connected with Rose showing that one may "rest and be thankful," it is possible to sit down quietly and take a survey of the field, see where the dead are lying, and where the banner floats which tells of victory; and in truth it is a field where reputations are wrecked and others made, and to the lover of the flower there is ever coming up the memory of some pleasant times, happy meetings, and let it be fairly said times of disappointment and depression; but it is well to look at the bright side of things, although we dare not keep out of sight the shadows which sometimes give by their contrasts greater breadth to the lights.

And now as to the season itself. We get so used to writing about exceptional seasons that we wonder if there is ever to be a normal Rose season. One is too hot, another too cold; one is too forward and another too late, and the wishes of Rose growers vary so much according to their localities that it is very difficult at times to come to a right conclusion. We have growers from far Aberdeen and sturdy Down, from canny Yorkshire and soft and luxurious Devon, from the counties where the east wind has its home, or where at any rate it strikes them with unhampered fury, to the soft and relaxing western counties, from the cold midlands and the bright and warm slopes of the southern counties; and the difference of climate, soil, and situation will colour to a certain extent the ardent east grower with promises. And in truth there are two different ways in which we may regard the season, one as to its connection with Rose exhibitions, the other with regard to its presence in the garden. With regard to 1889 as a Rose exhibition season I think we may safely say that it has been acknowledged on all hands to have been a most irritating and disappointing one. There was as fair a promise as could well be. The May frosts which have been so injurious of late years were absent. May was such a month as poets raved about, and redeemed them from the charge of poetic licence we were wont to charge them with when a piercing north-easter froze the very marrow of our bones. But the May of 1889 was a treat, and under its genial influence Roses grew rapidly, formed their buds, and gave promise of great beauty. There was a check at Whitsuntide, but still the Roses went on; and indeed in some places at such an express speed that before the exhibition time they had in many places passed their best. Thus at the great Show of the National Society at the Crystal Palace, July 6th, the Rose growers of East Anglia, Reigate, and Devon were almost out of the field altogether. Mr. Baker, who won the challenge trophy last year, could not show at all. Mr. T. B. Haywood, who won it in 1884, was pretty well over, and could not exhibit in the large class. The Roses from Suffolk and Norfolk, which have always formed a conspicuous feature of the Show, were almost altogether absent, and thus a very material difference took place in the number of prizes gained by the same persons in the past year compared with the last; and not only did the season make a difference, but the quitting of the field by several who have occupied a distinguished position in it has made a very serious difference, a difference that will be still further accentuated another season.

Two of our very best northern exhibitors, Messrs. T. B. Hall and E. R. Whitwell, have entirely given up exhibiting. It is not to be wondered at when an exhibitor has been successful, when he has gained the "blue riband" of the Rose world, and has had ten years of hard work (for exhibiting is hard work). It is no wonder if, like Mr. Hall, he desires to rest on his laurels; and then sometimes fancy changes, and Orchids usurp the place the Rose once held. The gap thus made will be still further increased by the retirement of Mr. W. J. Grant of Ledbury, another of our most successful exhibitors, and who perhaps never showed in better form than he did in this his last season for exhibiting. It will be readily seen what a difference these things must make. Are there others to occupy their places? I hope so. Mr. E. B. Lindell has come very much to the front this season, has exhibited in good form this year, and I quite expect to see him take a very foremost place.

But to return to the Roses. I hear every year, especially by those whose Roses are not up to the mark, that it is a bad year for Roses, not nearly so good as last year, &c. Now, my own conviction is that Roses were never better, although they came "uncommon awkward" for shows. It was a season (which rarely happens) when light and dark Roses were good; Charles Lefebvre, Camille de Rohan, and other dark Roses were not burnt up; Monsieur Noman, Madame Lacharme, and other light Roses not glued together, and hence when they were brought to the exhibition table they were all in good character. There was never a doubt as to what a Rose was, except when they were dressed (of which more anon), and it was a pleasure to go through box after box and to see how true to character they were. They may have been small or a little too far blown, but there was the Rose unmistakably before you.

It was, however, a season in which the northern growers had the pull, and the southerners showed under difficult circumstances. As a consequence of this the two challenge trophies again went to Messrs. Harkness & Son, whose record this year has been a very remarkable one, while in the case of the amateurs no northern grower was able at the provincial show to wrest the victory from the Essex champion, the Rev. J. H. Pemberton; and at the Crystal Palace Mr. W. J. Grant secured the victory, no more southern growers being able to compete with him—in fact, there the competition was by no means keen. Mr. Pemberton all through the season has shown well, and is an instance of the truth that if anyone wishes to keep up the competition during the season he must grow maiden plants. Most amateurs depend on "cut-backs," and the consequence is that as they are generally early when they are over, so is the chance of anyone who relies on them of getting a prize; but the maidens are late, and take up the place vacated by the former. The names of those who depend on them gradually fall out of the list, but the growers of maidens can keep on to the end. Mr. Pemberton or Mr. Grant can show at Bath during the first days of July, and even earlier, and they can put in an appearance in good form at Wirral or Tibshelf.

There is one subject to which I have already alluded which will become, I am sure, a burning question, and concerning which some decision will have to be made. I have already alluded to it, but it deserves very serious consideration, I mean that of dressing Roses. It was, we thought, one of the charms of the Rose that it needed no extraneous aid. A great outcry was made some years ago because exhibitors used gum in setting up his Roses, a practice which has long prevailed with regard to Pelargoniums, and it was decidedly condemned on the ground that the Rose needed nothing of the kind, and that the only addition was to be a support, so that the bloom might be well seen. There were, indeed, occasionally to be noted exhibitors with a pair of ivory tweezers arranging a petal, but this was thought, I believe, to be a piece of over-carefulness, and might have been left alone; but latterly there has been seen in some quarters a system of dressing which entirely alters the character of the Rose and makes it almost unrecognisable. This is a consummation which was never contemplated, and for which no rules were framed, but I think the National must put its foot down, or the practice will become general; for when it is seen that those who resort to this practice come off victorious, competitors will naturally lay it to the presence of these dressed flowers, although they have really made no appreciable value in winning the prize. Of course the difficulty will be in determining what is a dressed and what an undressed Rose; still, it is one of those nettles which must be fairly grasped. One great charm of the Rose is that it has so many different types of form, and if efforts be made to reduce them all to one uniform style a great deal of their charm would be taken away. I may be a heretic, but I greatly prefer the form of Marie Baumann to that of A. K. Williams, which however, seems to be the ideal of those who go in for dressed flowers.

One thing was, I think, very noticeable at exhibitions this year—viz., the manner in which some old Roses vindicated themselves, and were seen in great beauty. How lovely were Comte Raimbaud, Horace Vernet, Charles Lefebvre, and such Roses as Mons. Noman, Her Majesty (Simkins), Marie Finger, Captain Christy, and many others; indeed, there are some whose names had been well nigh forgotten, who showed that they were still to be reckoned with, while of new Roses some gained and others lost in reputation. Thus we cannot too highly praise the lovely bloom of Victor Hugo shown by Mr. Pemberton at Sheffield, or those of Sir Rowland Hill by Mr. Mack. Earl of Dufferin has established its reputation as a grand exhibition Rose, and Caroline d'Arden made an advance, while Grand Mogul has been regarded as indistinct. It appears to me to be Jean Soupert over again, colour, form, and foliage exactly similar to it. I think that the Rose which has most gained in favour is Rosieriste Jacobs. Everywhere it has been shown well, in some cases has been regarded as the best H.P. in the show; and thus a Rose which has been in commerce for nine years, for it was let out by the Widow Ducher in 1880, comes to the front; it was included in the supplement of the National Rose Society, and evidently deserves its place there.

Tea Roses have again been well exhibited, and some good new varieties have been shown. I do not think that anyone who saw Mr. Geo. Paul's bloom of L'Ideale will hesitate to say that in it we have a

most charming buttonhole Rose, with tints which it is almost impossible to describe, but which will make the ladies call it "a love." Souvenir de Sarah A. Prince has been variously judged, but I believe that the general verdict is that it is a great acquisition in white Tea-scented Roses; it is hardly fair to judge from a first season. The demand for it has been so great that Mr. Prince has been forced to work it as hard as he can, and as a result blooms have been cut from plants which had already done their duty in producing wood, but it has occasionally been so shown by Mr. Prince as to warrant one in saying that it is a great acquisition. It has not the pointed bud of Niphetos, but neither does it sprawl about as does that flower; the white is very pure, and it is very fragrant. Madame Hoste has been well shown more than once. It is a fine, bold, upright flower, and should it have enough stuff in it will be a most valuable Rose both for the garden and exhibition; it, too, may have suffered from over-propagation, and may be much improved in this respect when stronger plants are grown. Ernest Metz.—I have seen but one bloom of this flower kindly sent to me by my friend Mr. B. Cant. It has a grand stout footstalk, and the flowers are produced to all appearance singly. In colour the bloom I saw approached very closely to Catherine Mermet, but that is not the description which I have seen of it in Ketton's catalogue, where it is described of a delicate carmine rose with deeper centre, and Mr. Burrell informs me that he has had a bloom of it which displays the coppery rose colour of Comtesse Riza du Parc, and if so a Rose of that colour that does not quarter will be a very great gain. Pierre Guillot is another beautiful Rose of Guillot's of the Madame de Watteville type. I have not seen it, but Mr. Burrell informs me that it is given to quartering. Lady Castlereagh, another of the Irish seedlings, promises to be a valuable addition. I have had a few blooms of it, and they were very charming in colour, of good shape, plenty of petals, and opening freely; the colour a soft yellowish Rose, deeper on the margin of the petals.

I think no member of the National Rose Society, in looking on the Shows of 1889, but will feel that the Society was the victim of unfortunate circumstances. Can one ever forget the heat, the crush, the inconvenience of that tent at the Crystal Palace, all owing to the perverseness of that Eastern potentate, whom we at any rate would have wished had remained in his far off land? Never were fair hopes so falsified. Our Royal Patroness had announced her intention of coming to the Show early in the day, when she would have a good opportunity of seeing the flowers in their beauty; but the Shah would come, and would fix no other day, and so perforce the Crystal Palace Company had to submit, and at considerable expense put up the tent instead of having the Show in the Palace itself, and H.R.H. the Princess of Wales only looked upon faded and miserable flowers. I have heard from some loud condemnations of the Crystal Palace Company, but they are undeserved; it was a great loss to them, for as the Shah was bound to come there some day, it was rolling the attractions of two days into one. Mr. Head, the garden superintendent, had to work under great difficulties, and I do not think I ever saw anyone more thoroughly done for than he was that day. Well, the Shah does not often come, and we of this generation shall never again be put out by His Oriental Majesty. Sheffield, too, was not what the Society would have wished to see, the unfavourable character of the weather preceding and on the day of Show militated greatly against its success.

Again I have to express my thanks to so many kind friends with whom my annual duties have brought me into contact, and it is no slight matter of thankfulness that I have been able to fulfil all my engagements which the cooler weather made this year more pleasant than usual; no dusty and hot journeys, and save at the Palace no hot and stifling tents. I have said little about the home enjoyment of Roses; this I may touch upon at some future time.—D., Deal.

GRAND MOGUL AND JEAN SOUPERT.

I STILL think these Roses are practically identical. Having had a dozen plants of each growing close together for two years, I have been able to compare them constantly in all stages, and find them alike in every respect. The similarity is the more striking, because Jean Soupert the elder was so very distinct, when it came out, from other H.P.'s in every characteristic. The manner of growth, appearance of the wood, shape of the bud, the aggravating way in which, when the bud is formed, the plant seems to put all its strength into thickening the base of the shoot instead of swelling the bud, the colour and shape of the flower, were all unique till Grand Mogul appeared on the scene, and in no single particular can I detect any difference. It would, of course, be possible to select specimens of each which would be somewhat dissimilar, but there is hardly a variety in which some temporary variations might not be found, especially at this time of year. I think I could now cut a white Comtesse de Serenye and a pinkish Madame Lacharme; while among Teas I noticed to-day one or two Catherine Mermets nearly as white as The Bride, and a Madame Lambard quite as yellow as red. Wood, leaves, and thorns are a surer test. I can only say that I cannot find the differences noted in last week's Journal. It is true that a well-known exhibitor has written me that he finds one of the two a better bloom than the other, but with me there has been, as far as I can judge, the same average, both of quantity and quality, in each. If Grand Mogul be a seedling from A. K. Williams, a Rose of later date than Jean Soupert, it is certainly a wonderful thing that they should be so

similar, and both run in such a distinct and unusual groove ; but, if not actually identical, they are surely "too much alike" to be reckoned as separate by the N.R.S. A trained eye would generally, I think, be able to identify Sir Garnet Wolseley apart from Ferdinand de Lesseps as being less dark, if both are grown to perfection, but I have not heard much fault found with the verdict that these two are too much alike to be exhibited in the same stand.—W. R. RAILLEM.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 5TH.

FLORAL COMMITTEE.—A meeting of this Committee was held in the Gardens at Chiswick on Thursday last, September 5th, when Messrs. W. Marshall, Shirley Hibberd, F. Ross, and Lewis Castle were present. The collections of Heliotropes, Ageratums, Pelargoniums, Asters, and Dahlias were inspected, and awards were made for the following, three marks being equivalent to a first-class certificate, and two indicating an award of merit.

ASTERS.

These constitute a fine display, a large space of ground being occupied with them, the trials of strains and varieties being numerous and thoroughly representative. Certificates were awarded for Hedgehog, Imbricated Pompon, Half Dwarf Pompon, Victoria, New Liliput, Victoria Needle, Cocardeau or Crown, Dwarf Pyramidal, Large flowered Dwarf Queen, and Improved Rose. Awards of merit were granted for Dwarf Chrysanthemum, Dwarf Queen Victoria, Dwarf Bouquet, and New Victoria (Barr), most of those named being grown from seed supplied by Messrs. Putz and Dippe respectively.

AFRICAN MARIGOLDS.

Certificates were awarded for the following :—

Prince of Orange.—A compact growing variety, 2 feet high, large well formed, richly coloured flowers.

Lemon Queen.—Similar height to the above, very even, flowers good shape, soft clear lemon tint.

Dwarf Orange.—About 20 inches high, and would probably be less in an open situation, good habit, flowers, and colour.

Dwarf Golden.—Compact, free, and useful variety.

FRENCH MARIGOLDS.

Electric Light.—Dwarf, free, and good, flowers pale lemon.

Dobbie's French Selected.—Tall, flowers yellow with a few stripes, excellent shape, awarded a certificate for its floral quality.

DAHLIAS.

A large number of Dahlias came under notice, and certificates were awarded for the undermentioned.

Single.—Florrie Fisher (Ware), Chilwell Beauty (Ware), Miss L. Pryor (Ware), Kate (Ware), Paragon (Turner), Amos Perry (Turner), Mr. Kennett (Turner), Fashion (Cheal), Victory (Cheal), Magpie (Cheal), and Mrs. Kennett (Cheal). Awards of merit were adjudged for Duchess of Westminster (Ware), Miss Gordon (Turner), Guardsman (Turner), Hugo (Cheal), Negro (Cheal), and Edith (Cheal).

A certificate was also awarded for Empress of India (Turner), a crimson Cactus Dahlia ; and awards of merit for Professor Baldwin (Ware), a scarlet Cactus Dahlia, and North Light (Turner), a brilliant scarlet Pompon.

HELIOTROPES.

First-class certificates were adjudged for the following :—

Capus (Lemoine).—A remarkable variety with deep purple flowers, large truss, and good habit.

Fleur d'Été (Lemoine).—Light colour, large flowers and truss, dwarf compact habit ; free, and useful.

Victor Durny (Lemoine).—A tall, strong-growing variety, having an enormous truss of purplish flowers. Effective and useful for training against a wall.

ZONAL PELARGONIUMS.

Souvenir de Mirande (Lemoine).—Single, white centre, cerise edge, finely formed flower and truss, very distinct.

Opal (Pearson).—Single, dark salmon, darker centre, fine bold flower, good habit, free.

Charbon Ardent (Lemoine).—Double, brilliant orange scarlet, a dazzling, and distinct shade.

Seedling 137 (Lemoine).—Single, very large truss, of a peculiar rosy tint.

Semis (Lemoine).—Purplish crimson, rich colour, large semi-globular truss, one of the Nosegay type (award of merit).

SCABIOUS.

Half Dwarf Blood Red (Vilmorin).—An excellent strain, of an intensely light yet rich crimson colour. Fine compact habit.

A capital strain of Zinnias (Putz) was also commended.

CALADIUMS.—When these show signs of going to rest water should be gradually withheld until the foliage dies away in an almost natural manner. They should not be placed in a lower temperature than 60°. The tubers frequently rot when the plants are removed to a cool

structure and dried off prematurely. Treat Achimenes that have done flowering in the same way where the tubers are required for yielding plants another year.—N.



NATIONAL CHRYSANTHEMUM SOCIETY.

SEPTEMBER 11TH AND 12TH.

THE above Society's early Show was held in the Royal Aquarium, Westminster, on Wednesday and Thursday, when a large number of exhibitors competed, but chiefly in the Dahlia classes.

For a group of Chrysanthemums in pots arranged in a space of 60 square feet, quality and effect to be the features considered, Messrs. J. Laing & Sons, Forest Hill, were first, showing a tasteful collection similar to that at the Crystal Palace on the previous Friday. Mr. J. Chard, Brunswick Nursery, Stoke Newington, was a close second, a notable variety in his group being a quilled sport from Madame C. Desgrange named Mrs. Chard. Mr. G. Stevens, St. John's Nursery, Putney, was third for a group of taller plants edged with yellow and bronze Pommpons.

In the class for a collection of cut Chrysanthemum blooms Mr. Robert Owen, Maidenhead, secured first honours for over forty bunches of flowers, representing nearly as many varieties. The best were Mrs. Cullingford, white ; Frederick Pelé, red ; Madame Desgrange, white ; G. Wermig, yellow ; Mrs. J. R. Pitcher, white, slight blush tint ; Surprise, small rosy Pompon ; Mr. W. Piercy, bronzy red ; Canari, small yellow Pompon ; and St. Crouts, pink. Messrs. J. Laing & Sons were placed second for a bright and effective collection. Mr. E. F. Such, Maidenhead, was third with smaller bunches and flowers.

Five stands of twelve blooms of Madame C. Desgrange were shown, Mr. J. Blackburne, gardener to J. Scott, jun., Esq., Elmstead Grange, Chislehurst, was first for grand blooms, 6 and 7 inches in diameter, pure and substantial. Mr. J. Hudd, gardener to F. W. Prior, Esq., Gordon House, Blackheath Park, was a good second, and Mr. J. Barker, gardener to G. Taylor, Esq., Burton Closes, Bakewell, was third. Eight exhibits of six bunches of the same variety were entered, Mr. J. Blackburne leading, followed by Messrs. Pratt and Hudd.

A magnificent stand of twelve blooms of G. Wermig won Mr. Blackburne the premier prize in its class, the blooms being equally meritorious with the same exhibitor's Madame Desgrange. Of five stands of six bunches of G. Wermig Mr. H. Neary, gardener to the Rev. R. W. Powell, Holy Innocents, Hornsey, had the best ; Mr. Wright, Middle Temple Gardens, being second ; and Mr. H. Shoemith, gardener to M. Hodgson, Esq., Shirley Cottage, Croydon, third.

With twelve Pommpons Mr. D. B. Crane, 4, Woodview Terrace, Archway Road, Highgate, won first honours for excellent blooms of Lyon, Mrs. Cullingford, Blushing Bride, Précocité, Miss Davis, Alice Butcher, and Piercy's Seedling. Messrs. Neary and G. Stevens were second and third respectively.

For twelve bunches of Chrysanthemums Mr. D. B. Crane was the most successful exhibitor, showing good blooms of Sam Henshaw, G. Wermig, Madame C. Desgrange, Bronze Felicity, and Feu de Bengale. Mr. A. R. Rendell, 26, Northwood Road, Archway Road, Highgate, was second.

The Dahlias were numerous in all the classes, but as the exhibitors and the varieties were practically the same as those at the Crystal Palace in the previous week, it is not necessary to repeat them.

A meeting of the Floral Committee was held in St. Stephen's Hall at 12.30 P.M., Mr. E. Sanderson presiding, when certificates were awarded for several new Dahlias and one Chrysanthemum. At 4 P.M. a conference of Chrysanthemum growers was held in the same hall, papers being contributed by Mr. W. Piercy and Mr. J. Doughty, which we are compelled to reserve until next week.

Mr. T. S. Ware, Tottenham, had an extensive and handsome group of Dahlias, for which a silver-gilt medal was awarded. Messrs. H. Cannell & Sons, Swanley, also showed an admirable group of Dahlias, Begonias, Cockscombs, &c. (silver medal). Messrs. J. Laing & Son contributed a collection of Apples (highly commended). Messrs. J. Peed and Sons, Streatham, also had a collection of Apples (commended). and Mr. W. Gordon, Twickenham, had a group of Lilies (silver medal).

A MEETING of the Committee was held at Anderton's Hotel, Fleet Street, on Monday evening, Mr. R. Dean in the chair, there being a good attendance of members. The minutes of the last meeting having been read, the Hon. Secretary, Mr. W. Holmes, reported that the catalogue Sub-Committee were issuing a supplementary catalogue of eight or nine pages, which would be ready for distribution on Wednesday next at a cost of 3d. That the Sub-committee appointed to make arrangements for the celebration of the Centenary of the Chrysanthemum in

1890 had arranged certain preliminaries, and they were in communication with the authorities of the Royal Aquarium, and would shortly make a definite report. Communications have been received from the Auckland and New Zealand Horticultural Society inquiring for terms of affiliation with the N.C.S., thus proving the interest taken in the work of the Society at the Antipodes, and from Launceston, Tasmania, had been received an order for a dozen catalogues of Chrysanthemums issued by the Society. The Hon. Secretary reported that he had admitted the Penzance, Crediton, and Dalston and Haggerstone Chrysanthemum Societies to affiliation during the recess, and his action was approved by the Committee. Twenty-nine new members were elected, including two one-guinea Fellows, bringing the number of members up to 608.

An offer received from Messrs. Restall & Co., Cheapside, Birmingham, for the manufacture of the medals of the Society was considered, and the Hon. Secretary was instructed to obtain a limited number as samples. The consideration of some other matters of detail brought the proceedings to a close.

AGAVES AND YUCCAS.

ACCORDING to a London daily paper of the 30th ult. "the gardens and hothouses at Hamilton Palace are among the most extensive in the kingdom, and possess some very rare specimens of plants and flowers. The grandfather of the present Duke, as was the custom in Scotland among the great magnates in those days, had agents in all parts of the world who from time to time sent rare and beautiful plants to their employer. Hamilton Palace for many years was the only place where the Dalhousiana Rhododendron blossomed in Scotland, and just now a most beautiful specimen of the Yucca gloriosa variegata is in flower in the hothouse. It is said to blossom only once in a hundred years, and is the second plant that has flowered there. The plant stands 14 feet high, and the spike, bearing flowers of a rich creamy white, with a perfume like fresh coffee, is over 2 feet long."

The above paragraph serves to remind readers that there still clings to certain plants the reputation of having qualities that they do not as a matter of fact possess. The American Agave is one of them. The reputed flowering of this plant under cultivation after having attained the age of a hundred years is a tradition that would be difficult to trace to its origin, and more so to determine the extent it is correctly regarded in public opinion as being simply a floricultural fiction. It would, however, appear to be by no means a restricted belief shared only by an unintelligent class of people, notwithstanding the introduction of the plant to this country dates back to 1640, and the variegated form of it an additional forty years. It seems the Agave is no longer to be invested with the monopoly hitherto attributed, perhaps more widely than may be generally imagined, to its most fantastic feature, this being now claimed for one of its own class and order, and possibly there may be fears that there is no knowing where the implications may end. The Yucca gloriosa variegata may not be as generally well known as its prototype, which it may be remembered, like the Agave, hails from America, having a priority of about four years. In the case of the Agave, it was the variegated form that was first introduced, but not so in that of the Yucca, which, as erroneously remarked above, "blossoms only once in a hundred years." Planted in suitable situations out of doors Yuccas are very picturesque objects, and they have been known to flower three or four times in about a quarter of the space of time mentioned in reference to those at Hamilton Palace. Sometimes they produce colossal spikes with innumerable blooms, pleasing in appearance beyond description, and so impressively attractive that the remembrance of them remains until their flowering time recurs again.—J. E. J.

TREATMENT OF SOILS AND MANURES.

IN reply to Mr. Tonks, under the above heading on page 173, I did not pretend to use precise scientific terms, but hoped to make myself understood by the majority. As to the chemical actions and reactions referred to in my article, I am prepared to substantiate them. That most of the ingredients in artificial manures are in a compound form ready to mix with water and be absorbed by the plants I am aware, but of all the manures I have used or tested I never knew any that did not contain free acids. I could name several that are full of free acids, and that is the foundation of my statement. Carbonic dioxide and carbonic acid are not one, but are the same thing in a different form. Carbonic acid, H_2CO_3 , is a composition of hydrogen, carbon, and oxygen, while carbonic dioxide, CO_2 , is, as the name tells us, as di means two, is composed of carbon and oxygen, of oxygen two parts. Carbonic dioxide is a carbonic anhydrous acid. Whether Sachs and Warrington tell us or not that all the carbon is taken in through the pores of the leaves, I do not admit the statements. Carbonic dioxide is one of the heaviest vapours we have, and can be poured from one glass into another. This is one of the wise provisions of Nature, so that the carbonic dioxide of the atmosphere falls to the ground, there to mix with potash, soda, lime, magnesia, and ammonia, forming potassic carbonates, sodic car-

bonates, &c. It is pure assumption for Mr. Tonks to suppose that carbon is taken into the plant in this form and thrown off without being utilised. Will Mr. Tonks tell me where the other half of carbon comes from that he speaks of, and where the carbon comes from to form carbonates, if not from the manure, and where the carbonic acid from manure goes?

If Mr. Tonks had spent as much time on my article as he would have us believe, he would have discerned that I had stated six organic elements to which phosphorus belongs, as well as four inorganic as taking first place as plant foods. Mr. Tonks tries to show that hundreds of thousands of pounds are spent in phosphorus where nothing is spent in potassium, magnesium, calcium, and iron for manure; but as I understand the matter one or more of those elements are combined with phosphorus that is usually bought in this country. As to the division of the soil, I maintain that I am correct. I thought I was clear enough upon the point of the smallness of the soluble inorganic "active" part, and Mr. Tonks confirms me when he states the undecomposed minerals, which, by the united action of cold, heat, carbonic acid, and oxygen, are first disintegrated and then decomposed. Is not this the same process that I mentioned?

I did not say stable manure was very uncertain. I am so sure of its certainty that I should have no hesitation in growing for a wager against artificial manures under similar conditions. Is artificial manure a separate creation? or is it, as I understand, made from the created, and with well-prepared home manure both crops and land improve? If Mr. Tonks had spent as much time in ascertaining whether I was right as he did to prove me wrong, he would have come to a different conclusion than that 1 cwt. of artificial manure is as good as 2 tons of home manure. Why is it that the London growers do not use more artificials and save wear and tear of horses and carts in bringing manure from London? They know there is more body in natural manures, and that they do not impoverish their land. In most private gardens cow and horse dung can be had when a £10 cheque cannot always be obtained for purchasing something else. Before Mr. Tonks tries to persuade gardeners of the superior advantages of artificial manure he ought to act up to my suggestions and test those manures first that are at the disposal of the gardener. Though I have most of the authorities by me, I am not satisfied to always believe all that others tell us, but like to find something out for myself, and write from my own experience. Mr. Tonks, I think, can do more good by teaching what he considers good practice in good English than by quoting Latin mottoes which have nothing to do with either manures or cultivation.—G. A. BISHOP.

CROTONS.

WHERE small highly coloured Crotons in 3-inch pots are appreciated for furnishing with Mosses, Ferns, and other small plants, cuttings should be rooted at once. Plants from which good heads were removed some time ago have yielded quantities of side growths, well coloured, that are very suitable for this purpose. Only well coloured cuttings should be inserted, and when rooted fully exposed to the sun. All plants that are highly coloured and large enough for the purpose for which they are wanted may be ventilated more liberally, and kept cooler to prevent them starting again into fresh growth. Growth made after this date does not always colour satisfactorily, and therefore it is best to prevent it if possible.—B.

CRYSTAL PALACE FRUIT SHOW.

SEPTEMBER 6TH AND 7TH.

THE annual Exhibition of fruits at Sydenham has become one of the most important metropolitan events of the horticultural year, and a thoroughly representative display is invariably provided. The time at which it is held is a convenient one, and usually permits growers to stage fair samples of their produce, while the prizes are sufficiently liberal to induce exhibitors to travel from a distance, thus making the competition keener and conveying a better general idea of garden fruit culture throughout England. All the classes are open, and the prizes range from £12 to 5s., so there is a chance for competitors to clear their expenses and perhaps allow a margin of profit for the labour incurred. Collections of Grapes, Peaches, Nectarines, Plums, and Melons made the chief features, and to these the greater number of the thirty-two classes were devoted, but there was also provision for Figs, Tomatoes, Apples, and Pears. With regard to the two last the date is too early to expect many exhibits, and the autumn Show to be held at the Crystal Palace on October 10th and 12th will probably be the hardy fruit exhibition of the season in London. Yet the Apples staged were in most cases of admirable size and quality, and the number was larger than was anticipated, the non-competing exhibits adding materially to the display. They were not, it is true, all from trees out of doors, and a good proportion of the finest samples were no doubt gathered in orchard houses, which is somewhat misleading to the general public when the fact is not stated on the exhibits.

The quality of the exhibits generally was exceptionally satisfactory, and the number of entries was also good, the whole of the north nave being occupied with the tables devoted to the fruit classes. As is now customary at the Palace, these are arranged with spaces between, so that visitors can readily inspect the display without having to pass all round in a continuous crowd, as was necessary at one time, and Mr. W. G. Head has within recent years greatly improved the system of arrange-

ment in this and other respects. The introduction of foliage plants in lines on the table or in intermediate groups, together with the cut flowers in competition, and the groups of Chrysanthemums, Tuberous Begonias, increased the variety, brightness, and interest of the Show considerably.

COLLECTIONS OF FRUIT.

Three classes were devoted to these, and they always constitute one of the most interesting portions of the Show. The first was that for not less than twenty dishes, in which it was required that four varieties of Grapes (two white and two black, two bunches of each variety), two Pines, two Melons, two dishes of Peaches, two of Nectarines, and two of Plums be shown, the remainder to be distinct. The prizes were £12, £8, and £4, and for these three exhibitors entered, all staging good specimens, but after a close examination the premier award was granted to Mr. H. W. Ward, gardener to Right Hon. the Earl of Radnor, Salisbury, who had admirable samples of the following fruits:—Grapes, Muscat of Alexandria, very large bunches, medium berries; Alnwick Seedling, good colour, irregular bunches; Foster's Seedling, large bunches, well ripened, but dull dark colour; and Gros Maroc, compact bunches, large berries, good colour. Peaches, Sea Eagle, very large, and deep colour; with Goshawk, medium size. Nectarines, Elruge and Pine Apple, well ripened; fine Moorpark Apricots; Guthrie's Late Gage and Transparent Gage Plums; Citrons, Filberts, Raspberries, Red Robin Gooseberries, Brunswick Figs; medium-sized, well-proportioned Smooth Cayenne and Queen Pine Apples, Green Gem and seedling Melons, Williams' Bon Chrétien Pears, Winter Pearmain Apples, richly coloured; Morello Cherries, fine; well-kept White Dutch Currants; St. Michael Oranges, and Mulberries. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was second, showing Alnwick Seedling, Madresfield Court, and Muscat of Alexandria Grapes, very fine; Queen and Smooth Cayenne Pines were also excellent; and Violette Hâtive, with Rivers' Orange Nectarine were good. Mr. Goodacre scored well in Grapes, and well deserved his position; but there was a little falling off in some of the other dishes, as there almost invariably is in these large collections. Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hall, Guisborough, was third, his Grapes being extremely fine, especially Gros Colman and Gros Maroc. Plums also were good, and the collection altogether was a creditable one.

The next class was that for a collection to consist of twelve dishes, comprising one dish of black Grapes and one dish of white Grapes (three bunches each), and two Melons, and one dish each of the other varieties. The three prizes offered were £8, £6, and £4 respectively. The competition was excellent in this class, seven exhibitors entering, and the first prize was secured by Mr. R. Parker, gardener to J. Corbett, Esq., M.P., Impney, Droitwich, with an excellent collection, including the varieties named below:—Grapes, Muscat of Alexandria, large even bunches, beautifully coloured, and Alicante, even, bunches and berries with a fine deep bloom; Williams' Bon Chrétien Pear, Worcester Pearmain Apples, Carter's Blenheim Orange, and a seedling Melon, Morello Cherries, Victoria Nectarine, fine; Royal George Peaches, Black Ischia Figs, Kirke's Plum, and a large handsome Smooth Cayenne Pine. Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton Park, Trowbridge, Wilts, was second with capital Alicante and Muscat of Alexandria Grapes, fine Peaches, Nectarines, Figs, and Plums. Mr. T. Coomber, gardener to J. A. Rolls, Esq., The Hendre, Monmouth, was a close third, having fine Grapes, Peaches, Plums, and Cherries.

Still another class was devoted to collections, this time to consist of eight dishes, distinct, Pines excluded. There were three entries, and the most successful exhibitor was Mr. J. Dawes, gardener to M. Bidulph, Esq., Ledbury Park, Ledbury. His collection comprised Muscat of Alexandria Grapes rather green, but fine; Madresfield Court Grapes, excellent colour and even bunches; Dymond Peaches, Pitmaston Orange Nectarines, both fine; Doyenné Boussoch Pears, Jefferson Plums, Golden Perfection Melon, and Black Ischia Figs. Mr. C. J. Goldsmith, Kelsey Manor Gardens, Beckenham, was second, Golden Eagle Peaches being uncommonly handsome, large, and of a rich golden hue, and Mr. R. Ocock, Romford, was third.

GRAPES.

The Grapes formed an important show in themselves, and as twelve classes were specially allotted to them it can be imagined that the exhibits occupied considerable space, particularly since there were six to nine entries in the classes. The competition has been keener on some previous occasions, but there has rarely been a more strongly marked evenness of quality.

For a collection of ten varieties, two bunches each, six competitors entered, Mr. J. H. Goodacre winning first honours with Madresfield Court, small in bunch and berry, but of good colour; Muscat Hamburg, medium sized, compact bunches; Foster's Seedling, clean, even bunches of bright colour; Lady Downe's, long shoulderless bunches, good bloom; Gros Maroc, solid bunches, large berries, and excellent colour; Alnwick Seedling, even bunches, capital colour; Muscat of Alexandria, clean fine colour, large berries; Alicante, heavy bunches, small berries, dense bloom; Black Hamburg, medium size bunches and berries, but well coloured; Mrs. Pince Muscat, wanting in colour. Mr. James Dawes was accorded second honours for capital bunches of Alicante, Alnwick Seedling, Gros Maroc, Madresfield Court, and Muscat of Alexandria. Mr. H. W. Ward was third with clean, even samples, Golden Queen being notable, the others somewhat small.

With five varieties, two bunches of each, Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, was adjudged the premier position amongst six competitors. He had capital examples of Madresfield Court, large in

bunch and berry; Alicante, excellent colour; Muscat of Alexandria, very large bunches, and rich colour; Alnwick Seedling, enormous berries; and Gros Maroc, medium size, fine bloom. Mr. C. Warden, gardener to S. T. Bathurst, Esq., Clarendon Park, Salisbury, was second with good bunches, but rather small berries; Alicante and Madresfield Court being the most notable; and Mr. T. Osman, gardener to C. J. Baker, Esq., Ottershaw Park, Chertsey, was third with larger bunches, but rather wanting in colour.

Black Hamburg.—In this as in all the specially named variety classes, three bunches were required. Seven exhibitors entered, all showing fairly good specimens. Mr. J. Bury, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, won first honours for handsome bunches, the berries large and even; and Mr. J. Gibson, gardener to Earl Cowley, Draycot, Chippenham, was second, his bunches being large but slightly rubbed. Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Kingston-on-Thames, was third with compact bunches, a little deficient in colour, but good examples of the variety.

Muscat of Alexandria.—Mr. W. Taylor had the best of those shown by four exhibitors. The bunches were large and of capital colour, the berries fine and clear. Mr. C. J. Goldsmith was second with smaller bunches, and Mr. J. W. Reed, Weybridge, was third for rather green samples, but showing good culture.

Gros Maroc.—Five entered with this variety, Mr. J. Hollingworth, gardener to J. F. Campbell, Esq., Woodseat, Utttoxeter, leading with extremely large bunches and fine berries, having a rich bloom. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, was second for much smaller bunches but with large berries. Mr. J. Wallis, gardener to R. Sneyd, Esq., Keele Hall, Newcastle, Staffs, was third for medium-sized bunches of good colour.

Madresfield Court.—There was good competition in these classes, nine showing. Mr. J. Gibson was first with large well shaped bunches, bearing a dense bloom. Mr. J. Taverner, gardener to Sir A. K. Macdonald, Bart., Woolmer, Liphook, Hants, was second, his bunches being of medium size but remarkably coloured and one faulty. Mr. J. Bury was third for large bunches and berries not fully coloured.

Alicante.—This was a fine class, the nine competitors all showing well, and the contest was a close one. Mr. W. Taylor ultimately secured first honours for solid heavy bunches with a dense bloom. Mr. J. Hollingworth was second, the bunches of great size but rather crowded, and the berries smaller but very handsome and with a fine bloom. Mr. C. Griffin and Mr. J. T. Wright were equal thirds for heavy bunches of good colour.

Any other Black Variety.—There were nine competitors in this class, and some excellent bunches were staged. Mr. Hookings, West Moulsey, won chief honours with Gros Colman, fine in bunch and berry, the colour and bloom admirable. Mr. J. Bury, Forest Hill, was second with Alnwick Seedling, bunches and berries very large, and the colour good. The third prize bunches were fine examples of Gros Colman from Mr. McIndoe.

Any other White Variety.—The same number entered in this class as in the preceding. Mr. Allan was first with a variety named Foster's Seedling, but quite distinct from the ordinary type, the berries large, somewhat tapering, firmer in the flesh than Foster's, and of a fine golden colour. Mr. Ward followed with large bunches of Foster's Seedling well ripened, but the berries were somewhat small. The English Fruit Company, Duke Street, Grosvenor Square, W. (Mr. F. Bennett, manager), were third for heavy but unripe bunches of Trebbiano.

Baskets of Grapes.—Two classes were provided for these, the exhibits not to be less than 12 lbs. in weight. Of black Grapes there were eleven exhibitors, Mr. Timms leading with Gros Maroc, followed by Messrs. Bury and Hookings with Black Hamburg and Gros Maroc respectively. For white Grapes Mr. Peter E. Kay, Finchley, won the premier award with Cannon Hall Muscat, Messrs. McIndoe and W. Lane following in the order named.

MISCELLANEOUS FRUITS.

Peaches.—There was a good display of Peaches, Mr. W. H. Divers, gardener to J. T. Hopgood, Esq., Ketton Hall, securing the leading prizes in most of the classes, both for these and Nectarines, with handsome fruits, excellent in size and colour. With four dishes of Peaches Mr. Divers was first, showing Crimson Galande of deep colour, Princess of Wales large and handsome, Prince of Wales rich colour, and Dymond. Mr. McIndoe's second prize collection comprised Stirling Castle, Golden Eagle, Violette Hâtive, and Princess of Wales, all large and beautiful fruits. Mr. C. J. Goldsmith followed with good examples of Crimson Galande, Golden Eagle large and of a fine golden hue, Barrington and Noblesse. The competition was keen in the single dish class, no less than sixteen entering, and Mr. G. Duncan, gardener to C. J. Lucas, Esq., Warnham Court, Horsham, well deserved the first prize he secured for his handsome specimen of Barrington. Mr. Divers followed closely with Crimson Galande in fine condition, and Mr. McIndoe won third.

Nectarines.—In the class for four dishes of Nectarines, Mr. Divers led with Pine Apple, Victoria, Dryden, and Spencer, the three first-named very fine. Mr. McIndoe took the second place for Humboldt, Pitmaston Orange, Elruge, and Darwin, all well ripened, but rather small. Mr. C. J. Goldsmith followed with good fruits of Humboldt, Victoria, Pine Apple, and Albert, the last somewhat green. Mr. Divers also had the best single dish of Nectarines, Pine Apple, followed by Messrs. G. Duncan and W. Howe, gardener to H. Tate, Esq., Streatham.

A class was also provided for six dishes of Peaches and the same number of Nectarines, in which Mr. Divers was successful in winning the first prize for admirable fruits of the following—Peaches: Dymond, Crimson Galande, Princess of Wales, A Bee, Prince of Wales, and Barrington—Nectarines: Goldoni, Pine Apple, Dryden, Spencer, Victoria, and Byron.

Pears.—With three dishes of Pears (ripe). Mr. J. Butler, Sittingbourne, was first, showing *Beurré d'Amanlis*, Williams' *Bon Chrétien*, and *Doyenné Boussoch* in excellent condition. Mr. A. Waterman, gardener to H. A. Brassey, Esq., Aylesford, took the second place for Williams' *Bon Chrétien*, *Beurré d'Amanlis*, and Theodore Eyre. Mr. J. McIndoe was third. For collections of ten varieties, Messrs. Butler, McIndoe, and Goldsmith were the prizetakers in the order named.

Apples.—Mr. A. Waterman had the best three dishes of Apples (ripe), staging *Gravenstein*, *Duchess of Oldenburg*, and *Worcester Pearmain* of good size, clean, and bright. Mr. McIndoe followed, *Yorkshire Beauty* and *Ribston Pippin* being his best dishes, and Mr. J. Butler was third, *Devonshire Quarrenden* being notable amongst his Apples. In the large class for twelve dishes Mr. A. Waterman was the premier exhibitor, and he contributed some extremely fine fruits. Messrs. G. & J. Lane, St. Mary's Cray, were second, and Mr. McIndoe third.

Tomatoes.—The best six dishes of Tomatoes were those from Mr. C. J. Goldsmith, who won first honours in a class of eleven competitors all of whom showed well. The varieties were *Stamfordian*, *Reading Perfection*, *Acme*, *Hackworth Park*, *Mikado*, and *Carter's Perfection*. Messrs. G. Saunders and C. J. Waite were second and third respectively with very few points between them.

Plums.—Several classes were devoted to these, and the exhibits were satisfactory throughout. The principal prizes were secured by Messrs. Goodacre, Ward, Penfold, McIndoe, Waterman, and Chadwick. The varieties best represented were *Kirke's*, *Goliath*, *Prince Englebert*, *Jefferson*, *White and Red Magnum Bonum*, *Washington*, *Pond's Seedling*, and *Victoria*.

In the Melon classes the competition was keen, Messrs. Rodbourn, Miller, and O. Goldsmith taking the prizes amongst twenty exhibitors of scarlet flesh varieties, and Messrs. J. T. Wright, Goldsmith, and Grasettine were correspondingly successful with green flesh Melons amongst the competitors.

CUT FLOWERS.

Gladioli.—In the class for a collection of Gladioli not less than thirty-six varieties Messrs. Burrell & Co., Howe House Nurseries, Cambridge, were deservedly awarded the premier prize for a collection of ninety-six spikes, very fresh and brilliant, the most conspicuous being *Baroness Burdett Coutts*, *Enchantress*, *L'Amitié*, *Horace Vernet*, *Doris*, *Iolanthe*, *Grand Rouge*, and several bright seedlings of great promise. The Rev. H. H. Dombrain, Westwell Vicarage, Ashford, was awarded first honours in the class for eighteen spikes, consisting of *Enchantress*, *Mulatto*, *Grand Rouge*, *Crépuseule*, *Cervantes*, *Baroness Burdett Coutts*, *Meyerbeer*, *Néréide*, *Sceptre de Flore*, *Orphée*, *Dalila*, *L'Africaine*, *Arrière Gards*, *Mabel*, *Caméléon*, *L'Amitié*, *La Vesuve*, and a seedling. This collection contained more variety and colour than the second and third prize, Mr. E. B. Lindsell being placed second, and Mr. Walters third. Mr. Walters gained the first prize for twelve varieties, Mr. W. H. Apthorpe, Albion Brewery, Cambridge, the second, and Mr. W. J. Jones the third, all exhibiting well.

Asters.—Ten collections were staged for twenty-four quilled Asters, and Mr. G. S. Walters, Calne, Wilts; Mr. J. Walker, nurseryman, Thame, Oxon; Mr. W. J. Jones, Dafford Building, Larkhall, Bath, were first, second, and third respectively in the order of their names, the whole of the collections being neat and symmetrical. For twenty-four French Asters Mr. W. J. Jones was awarded first prize for a remarkably even collection, containing a large proportion of striped varieties. Mr. G. S. Walters was placed second; and Messrs. Saltmarsh & Sons third. All exhibited reflexed varieties of great substance. Sixteen collections were staged in this class.

Hollyhocks.—For a collection of twenty-four Messrs. Webb and Brand, Saffron Walden, were awarded the first prize for Walden King, M. Chater, Iris, Joy, Purple Prince, Prince Arthur, Mulberry Jam, Exultum, Cygnet, Fire King, Purity, Delicate, Henry Glasscock, Carus Chater, Constance, Golden Drop, Victor, Alfred Chater, and several seedlings. In the class for twelve Hollyhocks, cut blooms, Mr. Apthorpe; Mr. Thos. Hobbs, St. Mark's Road, Lower Easton, Bristol; and Mr. Jones were placed in the order named.

Chrysanthemums.—For a collection of early flowering *Chrysanthemum indicum* three groups were staged. The whole of them consisted of well flowered examples, Messrs. Laing & Sons, Forest Hill, gaining the premier award for a neatly trained collection, containing the following varieties:—*Fiberta*, *Alice Butcher*, Mrs. Cullingford, *Cassy*, *St. Crouts*, *Blushing Bride*, *Flora*, *Mlle. Léon Lassali*, *Delphine Caboché*, *Frederick Marronet*, *Nanum*, *Precocité*, Mrs. Burrell, *G. Wermig*, *Grace Attick*, *Blanche Colomb*, Mrs. R. Pitcher, *Lyon*, *Canari*, *Madame Jolivart*, *Madame Desgrange*, *Gentilisse*, *Comtesse Fouchre de Cariel*, and M. Picoul. Messrs. Jones & Davis, Camberwell, were placed second, and their collection contained good blooms of *Alice Butcher*, Mrs. J. Pitcher, *Nanum*, *Flora*, *Feu de Bengal*, *Madame Desgrange*, *Simon Delaux*, Mrs. Burrell, *Piercey's Seedling*, *Rose d'Été La Ami*, *Conderehet* and *Golden Fleece*. Mr. W. Piercey, 89, West Road, Forest Hill, was third for good plants, but lacking taste and effect of arrangement.

Mr. G. Osman, South Metropolitan District Schools, was well ahead for six *Coekscombs*. Mr. R. Spink, Victoria Road, Horley, and Mr. R. T.

Haynes, gardener to Mrs. Freeman, South Norwood Hill, shared the second and third honours.

Cut Stove and Greenhouse Plants.—Mr. J. Prewett, Swiss Nurseries, Hammersmith, received the first prize for a large collection, consisting of about fifty varieties, several of them being rare Orchids. Mr. A. Gibson, gardener to F. B. Atkins, Esq., Halstead Place, near Sevenoaks, was a very good second, having grand examples of *Lapagerias alba* and *rosea*, and Mr. T. N. Penfold, gardener to the Rev. Canon Bridges, Beddington, third.

Miscellaneous.—Several handsome collections of miscellaneous produce were staged both in fruit and flowers, and which greatly enhanced the interest of the Exhibition. Messrs. Veitch & Sons, Chelsea, staged 120 dishes of Apples and about 50 dishes of Pears, as well as some pot plants of Figs. Messrs. George Bunyard & Co., Maidstone, set up about 70 dishes of Apples and Pears, collections of *Roses*, *Dahlias*, *Asters*, and *Gladioli*, also a box of *Hydrangea paniculata grandiflora*. Messrs. Peck and Sons had a large collection of *Chrysanthemums*, *Dahlias* in variety, herbaceous plants, *Grapes*, *Plums*, *Pears*, and *Apples*. Messrs. G. Paul and Son an interesting collection of *Shirley Poppies* and choice herbaceous cut blooms and a box of hardy alpine *Cyclamen*; and Mr. E. Such, Rosery Garden, Maidenhead, staged a large collection of annuals and perennials.

Mr. Gordon, Lily and Orchid Nursery, Twickenham, staged a grand group of Lilies, principally *Lilium auratum rubrum vitatum*, which was much admired. Messrs. Cannell and Messrs. Laing both staged handsome groups of brilliant flowers. In Messrs. Cannell's there were as a back row about a dozen specimen plants of *Begonia Octavia* most profusely bloomed. The rest were composed of seedlings sown in February last, the whole being most attractive. Messrs. Laing's were particularly bright and effective. Messrs. Cheal & Sons staged a large collection of Apples, and Mr. John Page, gardener to A. Dixon, Esq., Leatherhead, fruit of the curious *Passiflora lauriflora* and *macrocarpa*, *Citruses*, and *Philodendron pentstemon*.

Certificates were awarded to Messrs. Laing & Co. for *Chrysanthemums*, *Comtesse Fouchre de Cariel*, a bronze Japanese of dwarf habit, and *Grace Attick*, a whorl-like Japanese form, colour white, dwarf and striking, but not of much substance.

BATH HORTICULTURAL SHOW.

SEPTEMBER 4TH AND 5TH.

ALL that is wanted to make every one of the five Shows annually held in Bath a success is fine weather. The exhibits both as regards quantity and quality are always good, but the Committee have of late years been most unfortunate in the date of their fixtures, so many excellent Shows having been marred by bad weather. Fortunately the Exhibition under notice was an exception to the rule, and as a consequence the attendance of visitors on both days was extra large. The total number of exhibitors was 279, the collective entries from these being upwards of 1500, and failures to stage were very few in number. Five large tents were filled with the exhibits, in addition to a long row of tables erected in the open air for vegetables. Altogether it was a highly satisfactory exhibition, the success being fully deserved by the Committee, of which Mr. James Chaffin is Chairman, and Mr. B. Pearson the Secretary.

Fuchsias are invariably one of the chief features at this Show, and these were fully up to the old high standard. The best nine varieties were shown by Mr. G. Tucker, gardener to Major W. P. Clarke, Trowbridge, who had grand pyramids, averaging 10 feet in height, of *C. Richman*, *T. King*, *Charming*, *Marginata*, *Miss Lucy Finnis*, *Harriett Lyc.*, *Bountiful*, *Doel's Favourite*, and *Lye's Favourite*. Mr. G. Snell, gardener to Mrs. Counsell, took the second prize for creditable plants, the veteran Mr. J. Lye, gardener to the Hon. Mrs. Hay, Market Lavington, having third place. In the class for six varieties, from which the foregoing exhibitors were excluded, the first prize was won by Mr. A. Hawkins, gardener to T. Jolly, Esq., Bath, Mr. W. C. Drummond, Bath, being second. A first prize was awarded to Mr. J. Weston, gardener to the Rev. C. C. Layard, for four *Fuchsias*, while the most successful competitors with single specimens were Messrs G. Tucker and G. Snell.

Stove and greenhouse plants were up to their usual excellence, and a step in the right direction was made in offering the principal prizes for a mixed bank of flowering and fine-foliaged plants, the latter serving to show the former off to the best advantage. Mr. J. Cypher was first, his group comprising grand specimen *Palms*, *Crotons*, *Ericas*, *Allamandas*, *Ixoras*, and other plants he so well knows how to grow and stage to the best advantage. Mr. J. Curry, gardener to Col. Pepper, Salisbury, was a fairly good second, and Mr. W. C. Drummond third, an extra prize being awarded to Mr. J. F. Mould, Pewsey. Mr. Curry had a first prize for eight fine-foliaged plants, these including *Croton Countess* and *Thrinax elegans* in good condition. Mr. H. Jones, gardener to Mr. J. Canning Doherty, was second and Mr. Drummond third. The best six flowering plants were staged by Mr. A. Taylor, gardener to C. W. Mackillop, Esq., Bath, who had *Ixora Westi*, *Dipladenia amabilis*, *Erica Eweriana*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, and *Ixora Reginae* in good condition. Mr. G. Tucker was second, *Lapagerias alba* and *rosea* being noteworthy in his group, and a third prize fell to Mr. J. F. Mould. In the class for a single specimen Mr. A. Taylor was first for a grand plant of *Allamanda Hendersoni* fully 7 feet through, this being somewhat yellow in the foliage, but well flowered. Mr. Cypher was most successful with *Ericas*, but was placed

second in the class for six Orchids distinct. With these Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, was first, having a fine specimen of *Cattleya Loddigsi*, somewhat past its best, *Cattleya Leopoldi* with three spikes, *Vanda suavis*, *Oncidium flexuosum*, *Lælia Leeana* and *Zygopetalum Mackayi*. Mr. Cypher staged *Cattleya Gaskelliana* with four spikes, *Dendrobium formosum* with three spikes, and other well flowered plants. The first prize for a new or rare plant was awarded to Mr. G. Tucker for a small trained specimen of *Schubertia grandiflora*, carrying twelve of its *Stephanotis*-like trusses of bloom. Mr. Cypher was second with *Cattleya Wallisi*, this having pure white flowers with the exception of an orange yellow throat to the lip.

For twelve varieties of exotic Ferns Mr. G. Tucker was first; Mr. T. Tucker, gardener to T. Carr, Esq., Tiverton, being a creditable second, and Mr. H. Jones third. The best six varieties were shown by Mr. W. Marchant, gardener to Jerome Murchant, Esq., Bath, the second prize going to Mr. J. Hiscox, gardener to E. B. Rodway, Esq., and the third to Mr. Brown, gardener to C. Bailey, Esq., Frome. The first prize group of six varieties of Zonal Pelargoniums staged by Mr. G. Tucker were exceptionally good, and other successful exhibits in the various classes for Pelargoniums were Messrs. H. Jones, A. F. Cray, S. Tottle, and E. B. Tittle. Tuberous Begonias, both double and single, were well represented, the prize lot in each instance, and which were shown by Mr. C. Richman, gardener to Mr. G. H. Palmer, being worthy of special notice. Messrs. G. Cooling & Sons, Bath, were first for well flowered *Lilium auratum*, and were second to Mr. T. Carr for four varieties of *Liliums*.

This year, for the first time at the autumn Show, prizes were offered for groups of miscellaneous plants arranged for effect, space not to exceed 100 square feet, and this attracted three competitors. Mr. J. Cypher was easily first with a very light and tasteful arrangement. The front was irregular in outline, being much the fullest in the centre, and was very prettily finished off. From a groundwork of Maidenhair Fern sprung numerous well grown Crotons, Palms, Dracænas, notably *D. Lindenii*, Orchids, *Liliums*, and other elegant plants. The common error of crowding too many plants together was avoided, yet no unsightly pots were observable. A somewhat similar arrangement gained Mr. Curry the second prize, the third going to Mr. R. B. Cater for a more formal but fine group.

One tent and part of another were devoted to cut flowers, the competition in every class being close. Roses were well shown. With thirty-six varieties Messrs. J. Jefferies & Son, Cirencester, took the lead, the best being Mrs. Jowitt, Alfred Colomb, Duke of Teck, Etienne Levet, Comtesse de Choiseul, Duc de Roban, and Charles Lamb. Mr. J. Mattock, Oxford, was second, and Messrs. Keynes, Williams & Co., Salisbury, third. In the class for twenty-four varieties Mr. J. Mattock was first, his best being Ulrich Brunner, Souvenir d'Elise Vardon, C. Mermet, Duke of Teck, Dupuy Jamain, Auguste Rigotard, Souvenir d'un Ami, and Her Majesty. The second prize was awarded to Mr. A. H. Gray, Bath. His stands comprised Teas only, the best of these being Comtesse Nadailac, Jean Ducher, Marie Van Houtte, Niphetos, Maréchal Niel, Souvenir d'Elise Vardon, and The Bride. Dr. Budd was third. Gladioli made a fine display, the thirty-six varieties shown by Mr. G. S. Walters, Calne, and awarded the first prize, being especially good. In this class Mr. R. H. Poynter, Taunton, was second, while with twelve varieties Mr. S. Tottle, Taunton, was first, Messrs. J. Jefferies and Son second, and Mr. A. A. Walters third. Messrs. Heath & Son, Cheltenham, were first for twenty-four varieties of Dahlias, Mr. G. Humphries, Chippenham, being a close second, and Mr. J. Nation third. For Fancy Dahlias Mr. G. Humphries was first, Messrs. Heath and Son second, and Mr. T. Hobbs, Bristol, third. Asters generally were very good, and with these the principal prizewinners were Messrs. W. J. Jones, G. S. Walters, and Walters Brothers. The first prize for twenty-four varieties of choice cut flowers was won by Mr. R. Richards, the second going to Mr. R. Wait. Messrs. G. Cooling & Sons were first for cut herbaceous flowers, Mr. A. A. Walters being second, while the first prize for annuals went to Mr. A. Hawkins, and the second to Mr. G. Garraway. Mr. C. Winston, Clifton, was well first for a beautiful hand bouquet, and was also first in the class for an epergne.

Fruit filled one good sized tent, and, as usual, came in for a great share of attention. There were six competitors with eight bunches of Grapes in four varieties, but the Judges had no difficulty in awarding the first prize to Mr. W. Taylor, gardener to J. Chaffin, Esq., who had grandly finished Muscat of Alexandria, perfect bunches of Alicante, good Alnwick Seedling, and Madresfield Court. Mr. J. Bury, gardener to C. Bayer, Esq., London, a new exhibitor, was a creditable second, his weak point being Foster's Seedling. He had very fine Black Hamburg, excellent Alnwick Seedling and Madresfield Court, and well coloured but slightly rubbed Alicante. Mr. J. Gibson, gardener to Earl Cowley, Draycot Manor, was a good third, his best being Black Hamburg and Madresfield Court. Mr. J. Bury took the lead in the class for Black Hamburg, having compact bunches with extra large well coloured berries. Mr. Gibson was a good second, and Mr. J. Ellicott, gardener to H. W. Tugwell, Esq., a close third. For any other black variety Mr. W. Taylor was first with Alicante in superior condition. Mr. W. Fisher, gardener to E. G. Peacock, Esq., Bath, being second with good bunches of the same variety. In the Muscat of Alexandria class Mr. W. Taylor was again first, having two handsome bunches; Mr. J. Gibson was second.

The competition with any other white variety was less keen than usual. Mr. W. Askell, gardener to J. B. Brain, Esq., was first for beautifully ripened Foster's Seedling; the second prize going to Mr. W. Carpenter for the same variety in good condition. A class was provided

for local Grape growers, and in this the competition was keen and good. Mr. J. Brimble, gardener to J. Fortt, Esq., was first for fairly good Muscat of Alexandria; the second going to Mr. Carpenter for Alicante. Melons were largely shown, but many of them would not stand the tasting test. In the class for a green-flesh variety Mr. M. Cole was first for a good fruit of Imperial; the second going to Mr. W. Matthews for Eastnor Castle. For a scarlet flesh Melon Mr. W. Allen, gardener to G. P. Hallett, Esq., was first with a well-grown fruit of Scarlet Invincible; Mr. G. Hiscox being second with Blenheim Orange. Peaches and Nectarines are still cut at Bath, but there ought to be no need for this disfiguring process. A good dish of Peach Bellegarde gained Mr. A. Miller, gardener to W. H. Long, Esq., Trowbridge, the first prize; Mr. T. Head being second with Royal George in good colour. Mr. R. H. Taylor had a first prize for Nectarine Pine Apple; and Mr. G. Pymm was second with a much finer dish of the same excellent variety. Plums in great variety, Apples, Pears, Cherries, and Figs were all extensively shown, the quality throughout being superior. Mr. A. Miller was the only exhibitor of a collection of fruit, and fully deserved the award of a first prize. He had fairly good Alicante and Muscat of Alexandria Grapes, Rood Ashton Melon, Bellegarde Peaches, Pine Apple Nectarines, Brunswick Figs, Bon Chrétien Pears, and Jefferson Plums, all in excellent condition.

Vegetables were so numerous and well shown as to merit a fuller notice than can be given them. The best out of several collections of twelve varieties was staged by Mr. G. H. Copp, gardener to W. E. Erle Drax, Esq., Sherborne, who had very fine Cauliflower, Autumn Giant; Carrot, Sutton's Intermediate; Tomato, Perfection; Potato, Sutton's Seedling; Beet, Pragnell's Exhibition; Cucumber, Tender and True; Pea, Telephone; Parsnip, Ellacombe's Improved; Leek, The Lyon; and Celery, Sutton's Giant White. Mr. T. Wilkins, gardener to Lady Theodore Guest, Blandford, was a good second; and Mr. G. Garraway, Bath, third. Mr. Copp was also first for six varieties (the prizes in this class were provided by Messrs. Sutton & Sons, Reading), Mr. Wilkins being second, Mr. A. Spry third, Mr. T. Tilley, Banwell, fourth, and Mr. J. Hall fifth. Messrs. Webb & Sons, Stourbridge, also offered prizes for six varieties of vegetables, and for these the competition was very good. Mr. C. J. Waite, gardener to the Hon. Colonel Talbot, Esher, was first; Mr. G. Garraway second, and Mr. Copp third. Baskets of salad were very large. Messrs. Tylee and Evry being the prizewinners. The best dish of Tomatoes was shown by Mr. Cray, Frome, who had Perfection at its best. Dr. Budd was second. The cottagers also made an excellent display of vegetables.

Non-competitive exhibits were numerous. Noteworthy among these was a fine collection of cut Roses, Gaillardias, Dahlias, and other flowers shown by Messrs. G. Cooling & Son, to whom a certificate of merit was awarded. Messrs. Cooling & Son also had a good collection of named Apples and Pears, gathered from their nursery trees, and which it is to be hoped proved instructive to the numerous gardeners who critically inspected them. A certificate of merit was awarded to Mr. J. Mattock for a fine display of Tea Roses in bunches; and also to Mr. A. H. Gray for several stands of well-grown Teas.



FRUIT FORCING.

VINES.—Houses of Ripe Grapes.—Black Hamburg and other thin-skinned varieties are liable to have the colour taken out of them by hanging under powerful sun. Some netting should be drawn over the lights to prevent it. Black Hamburgs and Foster's Seedling will bear a moderate amount of air moisture, provided it be not stagnant, and it is very necessary for the benefit of the foliage; but Madresfield Court does not endure moisture to the same extent as Black Hamburgs, and must be treated accordingly. It, however, loses colour quite as badly, and must be shielded from the direct rays of the sun. Muscats hanging on Vines with the roots in outside borders will keep a long time, protecting the roots from heavy rains. A covering of dry fern, shutters or tarpaulin, answer, but glazed lights are better, placed in a sloping position for throwing off the wet, as they admit sun heat, and retain it for warming the border. If the foliage is not sufficient for the protection of the tender skins of the berries some light shading will be necessary, particularly where the houses are glazed with large panes of glass. Hexagon netting answers well, and drawn over the ventilators excludes wasps, which have appeared in force when we were congratulating ourselves on their comparative scarcity. The thick-skinned varieties will require, whether the Grapes are to be kept on the Vines or in the Grape-room, liberal ventilation with gentle fire heat for the maintenance of a certain circulation. With the Grapes ripe gradually reduce the strong laterals as the days decline in length, and keep the foliage healthy by means of a moderate supply of moisture on the paths and floors sufficiently early in the day to admit of the atmosphere becoming light and buoyant before nightfall.

Lifting Vines.—Where lifting and relaying the roots of early and

midseason Vines is contemplated, it should be seen to as they are cleared of the crops. The sooner it is done the better. Good loam, with some brick and lime rubbish, and a liberal admixture of charcoal and crushed bones, will meet all requirements in respect of compost. See to the drainage, make it satisfactory, and follow on with turf grass side downwards, or preferably a 3-inch layer of lime rubbish. Keep the roots near to the surface, always bearing in mind that a narrow border well filled with roots is preferable to a large mass of soil at the onset, as the roots can be more easily excited and fed at the proper time. The Grapes, too, in a border well in hand invariably set and colour better. Always choose dry weather for making the border. Cover it when finished with good stable litter, and keep the interior of the house close and moist until the foliage shows signs of fresh root action having set in, then ventilate freely and keep the air dry. In all cases, especially cold wet localities, the Vines should have inside as well as outside borders, as the roots can then be lifted and relaid in either of the borders without injury to the following year's crop.

PINES.—Young Pine plants always present a luxuriant appearance at this season under liberal and proper treatment. Sun heat being now on the wane, greater care will be necessary in the management to prevent the foliage becoming soft, and measures should be taken to consolidate it by a drier atmosphere and artificial heat. Syringing will only be needed occasionally, and it should be done early in the afternoon of bright days. Water must only be given when absolutely necessary, then afford a plentiful supply of weak liquid manure in a tepid state. The bottom heat should be kept steady at 85°, or between 80° and 90°, and pay particular attention to the ventilation, which is important at this time of year. Plants in a luxuriant condition should have air at 80°, above which ventilate liberally, especially on warm sunny days, and close the house for the day at 80°. The night temperature should be maintained at 65°, allowing 70° to 75° by day artificially.

Fruiting Plants.—These should be brought together in a structure suitable for finishing the fruit well. Plants that are intended for starting into fruit early in the year should be selected from those that were started last spring, and be arranged not later than the end of this month where they can rest for six weeks. Those on which the fruit is swelling should be encouraged with liberal heat and moisture, keeping the night temperature from 70° to 75°, and that in the daytime from 80° to 90°, closing the house at 85° with sun heat.

STRAWBERRIES IN POTS.—The plants are making very satisfactory progress. In the earliest plants the crowns are becoming plump, sufficiently so at least for the detection of plants that will not be available for early forcing, and which should be removed at once, even those about which there is a suspicion of being barren, making good the deficiency from the surplus stock. Worms and weeds are troublesome, also runners. Lime water will expel worms, and the weeds and runners can be promptly removed. The pots should be wide enough apart to allow of the sun and air having free access to the foliage. The crowns, which in some are numerous, particularly Vicomtesse Hericart de Thury and Sir Charles Napier, should be reduced to the central or stronger one, not deferring it until they have attained to a considerable size, but as soon as they can be taken hold of with the finger and thumb and lifted out of the socket. This will concentrate all the vigour in the main crown; those will afford strong flower spikes, and then by selecting the largest and best formed flowers a crop of fruit will be insured, large and creditable to the grower. Any late runners may yet be potted, and with good attention they will be serviceable for late work in 5-inch pots, and may afford fine fruit and collectively as full a crop as those in larger pots.

THE BEE-KEEPER

NOTES ON BEES.

TIERED HIVES.

THE word tier is a term improperly used instead of storifying. I have indeed used the expression, but it is incorrect. I have taken up this subject in reply to what "Felix" says at page 167, accidentally discovered by me on searching for some notes amongst accumulated correspondence in the Journal for August 20th, which had never been opened, hence my delay in answering. The text of "Felix's" remarks is the following, which I suppose is taken from an article written by me:—"While tiered hives are undoubtedly the largest producers, still it is a loss to attempt frustrating the swarming mania, and as swarms always work the best we should take them the first opportunity, and make the most of them." I have taken great pains to lay before your readers every phase of bee-keeping, including that which "Felix" says is "one to which many will, in my opinion, take great exception, and therefore in order to prevent what appears to me to be a wrong

impression from being circulated it is necessary to consider the meaning of these words." The causes of swarming are not well understood by the majority of bee-keepers. "Felix" appears to agree with all I have said—in fact, endorses what I say, and yet adds it will cause a "wrong impression," but gives no information whatever to prevent it further than to "manage skilfully." I throw down the gauntlet to "Felix," and now let him tell us all how to manage our bees "skilfully," so that they will not swarm. I say it cannot be done otherwise than by carefully giving more breeding space at the time a young and fertile queen is introduced after the old queen is deposed, and this course is exactly what "Felix" deprecated. My notes made at the Heather bear greatly upon the subject, and have appeared in these pages, for the sole purpose of enlightening bee-keepers generally, and I am glad to say they are being acted upon by many who read my notes; but I shall wait patiently for "Felix's" forthcoming remarks on managing bees "skilfully," how to prevent swarming.

Swarming takes place when more than one queen exists in one hive at the same time, and occurs from March till October. We have had a swarm issue on different occasions, the day after two had been joined in the month of October. Whenever a queen becomes incapacitated from any cause and unable to deposit eggs in the cells prepared for that purpose, queen or royal cells are brought forward, and swarming takes place if the weather is favourable, which nothing but the excising of all but one royal cell will prevent. Extra room will not do it, no matter how or where it is given, and I do not believe that one variety of bee swarms more readily than another. One variety gives more after swarms than another does, but all are actuated by a natural propensity.

AT THE HEATHER.

A very large swarm issued from a Carniolian prime swarm owing to a young queen and part of a swarm being blown on to it. The bees and queen were allowed to remain unmolested for two days, then, owing to the presence of two queens, the swarm issued leaving the queen regnant as she was previously. I know whereof I write, and do so advisably, and am open to conviction when wrong, but unless "Felix" offers stronger proof that I am wrong and misleading I must continue to advise as I have hitherto done.

DRONES.

Drones are sometimes a great drawback to bees when at the Heather. If a few wet days intervene, and no honey is coming in, when a bright day occurs the bees take to killing, or rather hunting out the drones, which are strong, and return again, or enter weaker hives, much to the annoyance of the bees, deterring them from gathering honey even although it be plentiful. The Punic stock was greatly taken the advantage of in this respect, numerous drones took refuge in it, and were perhaps the cause of these bees gathering less honey than the others. It is generally believed that when bees kill their drones it is a sure sign the queen is fertilised. This is far from being the case at the moors; several only a day or two before swarming, and even after it, turned out their drones and drone grubs in a wholesale fashion.

COMPETITION.

As in former years bees are here from different parts of Scotland and from over the border. All owners have their favourite hives. I have no alternative, when I take all there is to contend with, but to adopt the Lanarkshire storifying hive, so well adapted for bee-keeping in all its phases. Its comparatively large internal capacity, combined with its small outside dimensions and construction for safety to bees and co-passengers, warrants its recommendation. Two hives from Carlisle stand a little distance from my own; they measure about 217 cubic measure, certainly out of all proportion to their internal capacity. From appearance these hives cannot weigh less than 1 cwt. each when empty, while the size is sufficient to prevent most people adopting them, practically putting an end to taking bees to the Heather. The bees of one of these

hives worked well, and the hive appears to be heavy, as I had to put my shoulder to it before one side of it could be raised from the ground. My own hives tare run about 30 lbs., so when compared with these bulky ones of the south, and taking the conveyance into consideration, all will perceive my reasons for adopting the lighter form of hive.

After the bees are once placed on their stands there is not so much difference in the ingathering of honey by those in differently formed hives. The advantages are gained by using light ones when convenience and expenses are concerned, and for wintering and spring management, which latter means much and often all in the way of profit. Of course, our form of hive is more suitable for getting filled and finished supers free from colour than are other makes, but the aggregate gathering by any colony at the Heather depends more upon the variety and number of bees in a colony, and its proximity to the Heather, than upon the form of hive. The nearer to the Heather that bees are situated the more honey will they gather and with less loss of bees. This has been fully demonstrated in our friendly competition this year, and we advise all to place their bees as near to the Heather and in as sheltered a situation as possible.

PUNIC BEES.

I wish to thank "A Hallamshire Bee-keeper" for his reply to my query, but he appears to have misunderstood it. It is not the earliness of the day, but at the early age of six days that the young Punic bees began to work. I am glad to observe that he is making investigations as to bees swarming, and hope he will give us the benefit of his discoveries. Like him, I have had a swarm issue from a hive, leaving neither queen nor the means of raising one behind.

FEEDERS.

I observe what "Felix" says about feeders. One, nearly if not a hundred years old, lies before me of the same construction he advises; and, moreover, I never saw a float feeder made otherwise than the way he describes as an improvement.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

T. S. Ware, Tottenham.—*Catalogue of Peonies and A B C Bulb Guide, 1839.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Lichen in Lawn (J. P.).—Your lawn is either wet or poor, or both. Rake out all the moss and lichen you can, drain the ground if necessary, and top-dress with good loam, wood ashes, and lime.

Welshman Plum (R. G.).—We prefer to withhold the publication of our opinion respecting this Plum till we are supplied with

information relative to the origin of the variety. Why not send specimens to the Fruit Committee of the Royal Horticultural Society?

Virginian Creeper (W. B. K.).—Soil and climatal influences affect the colour of the leaves of this, in common with other deciduous plants and trees. Autumn foliage tints last year were not nearly so bright as they were the year previous, and this year they are comparatively dull in many districts, probably in consequence of the cold wet weather that prevailed a few weeks ago. If the roots of your Ampelopsis have not entered a cold clayey subsoil, the leaves will assume their bright red tint when the summers are favourable to its development. We have seen several examples of the leaves changing to purple instead of red.

Muscat Grapes Decaying (G. E. W.).—Undoubtedly, as you say, it is most dispiriting for a gardener to make such a good start, and set such a good crop of Muscats, and then be denied fuel for ripening the fruit. During the cold, wet weather that followed the withholding of fuel the Vines received a severe check, and that was unquestionably the cause of the present unfortunate condition of the Grapes. They have not ripened, and if no artificial heat is provided the probability is that the wood will fail to ripen too, and the Vines may be permanently injured. The fault, however, is not yours. The treatment you describe as having given up to the time the fuel was disallowed was quite correct, and if it had been pursued we doubt not that the enhanced value of the crop would have been considerably greater than the amount that has been saved in fuel. If a gentleman desires to have even fairly good Grapes without artificial heat he must grow other than Muscats.

Compost for Vine Border (A. S.).—We do not advise your adding anything in the form of manure to the ingredients named, but should prefer three or four cartloads of strong loam to the "medium." If the texture of this is what we understand it to be, we are inclined to fear that the border will be too light, and we should not have used more than half the quantity of lime rubbish you state to loam of medium texture. The border will be quite rich enough for some time, and especially as you will no doubt mulch the surface with manure after planting. We should take care the compost is neither too wet nor too dry, then press it down rather firmly, and not make the border the full width at once. Four feet will be ample the first year, and perhaps longer if care be taken that the soil does not get dry, particularly near the outer edge. The best Vines we have seen this year have made two seasons' growth in a rooting space not more than 3 feet wide, but another section will shortly be added to the border. Manurial ingredients can be applied in the form of top-dressings if the condition of the Vines suggest that they require additional support. Your second letter shows conclusively the inadequacy of your first question. The mixture suggested will grow healthy, fruitful Vines under otherwise good management, and without this either that or any other compost will fail to produce the best of Grapes.

Renewing Outside Vine Border (J. G.).—As the inside border was renewed three years ago, and now, as you indicate, contains active roots, you may carry out your proposition; but is it not a little strange that if the roots are plentiful near the surface and the soil good that no improvement in the Vines followed? However, admitting the roots, we should take care the border containing them is thoroughly moist, and should then not hesitate to cut boldly through the roots 8 feet from the house in the outside border, removing the whole of the soil, cutting off all bruised ends smoothly with a knife, notching also some of the larger roots, retaining all of a fibrous nature, keeping the whole of them moist, and place them in fresh good soil containing a large admixture of wood ashes. This we should do as soon as the fruit is cut and before the leaves fall, syringing and shading these if necessary for keeping them fresh for inciting fresh root-action at once. We have known the most satisfactory results follow this method of renovation when conducted by able gardeners, and Vines greatly improved the first season. We suspect you have been overcropping the Vines and possibly overcrowding the foliage, or the Grapes would scarcely shank so "terribly" with "roots near the surface in the inside border." As the site is low and the subsoil clay by all means raise the border and keep the roots in the good soil provided.

Bottom Heat Chamber—Winter Cucumbers (A. A. B.).—A rough and ready, cheap, and long lasting covering for hot-water pipes is found by many persons in clinkers and stones of various sizes, and the larger the better for the bottom, smaller yet open at the top. A few old slates, tiles, or boards as are most readily obtainable are placed on these, then long manure and leaves before placing in the soil. Iron or strong wood supports, with a flooring of slates, are employed when the materials are at hand or can be had cheaply. Individual means and local resources generally determine the matter in such cases as yours. For producing good crops of Cucumbers, and liberating the house in March, plants ought to have been raised more than a month ago. We do not say you will fail by sowing now, as we are unacquainted with your cultural experience, but we have a strong opinion that the longer you delay the less will be your chance of a profitable yield by the time named. We have seen good crops of Tomatoes grown in beds after Cucumbers without removing the soil, but obviously we can give no assurance that you will equally succeed, as much depends on the soil used and general management. If you have not grown Cucumbers in winter you must not expect great profits from the first endeavour, though there is the probability of your making a fair return if the house is suitable and you accord the plants the requisite attention.

Helianthus multiflorus var. Soleil d'Or (W. B. H.).—Please do not send us any more blooms of this variety, for it is no pleasure to open box after box and not find one flower in a fit state for engraving. Had you simply done as we suggested, packed the blooms in some newly cut grass, and we think there is some in Ireland, they would have arrived as fresh and bright as when cut from the plants, but by coiling each in dry paper the moisture was extracted from the petals, and the blooms reached us much nearer black than yellow, besides being crushed out of shape. It is most disappointing to see beautiful flowers spoiled by bad packing, and if all you send out reach those for whom they are intended in the same condition that every one has been received here we have no hesitation in saying that the merits of the variety are by no means fairly represented. The letter you send is not suitable for publication, and we do not require further evidence to satisfy us of the distinctness of your variety from the one usually grown in gardens. Plants of both are now flowering at Chiswick, and the difference is obvious. Indeed there is practically as much difference between the two as between a bad Anemone flowered and a good reflexed Chrysanthemum, and we agree with Mr. Barron in regarding the double perennial Sunflower named Soleil d'Or as an acquisition to tall growing border plants for flowering during late summer and early autumn.

Vines Failing (J. C., Somerset).—We wish all seekers for information would state the circumstances of the cases they bring before us as clearly as you have done. When the leaves, become "very badly" attacked with red spider, the best of soil cannot avail in preventing injury to the Vines and disappointment in the crops of fruit. We do not consider the condition of the Vines by any means entirely due to the insects in question. The leaves have simply languished and changed prematurely through lack of support. You say that on examining the border a few days ago you found it "very dry," that is quite sufficient to account for the state of the Vines, and would render them particularly liable to the attacks of the small but destructive enemy. No matter how good the soil may be its virtues are inert in the absence of moisture. We usually find the best of Grapes when the Vines are in firm soil, yet a little springy to the feet, not hard like a cement floor, nor soft so that each step makes a deep impression. But we should decidedly object to painters tramping on a Vine border, and possibly when the surface was not always dry, and should provide them with boards for use in working, and if they did not use them they would have to work elsewhere. We do not think you can justly blame the men for making the border hard if you did not find them boards to step on; nor are the insects to be blamed for turning the leaves yellow. The great mistake and source of the evil was in allowing the border to become so dry. The remedy is to lose no time in making it thoroughly moist. Point it over carefully, not of necessity deeply, but break the close crust, and pour on water copiously as the work proceeds. As the border is concreted and drains and outfalls provided, do not consider the watering adequate till some escapes into the drain. For effecting this you will probably have to go over the border twice. The first time we should use clear water, the second liquid manure, with a sufficient interval between the applications for the surface to get just dry enough for boards to be used by the workmen without dragging up the soil when they are turned over. We suspect the soil is poor as well as dry. Some pastures contain little or no Vine food. The drainings from manure heaps would do the Vines good; failing this rich liquid, procure some good guano and dissolve it at the rate of an ounce to each gallon of water. Cover the border well with manure instead of reeds, and let the rains wash its virtues into the soil. When Vines are forced, and especially if the soil is strong and very retentive, throwing off the rains of winter is very beneficial; but with your well drained and concreted border, probably porous soil, and light rainfall, also no artificial heat in the house, the practice may easily be more injurious than beneficial. Moisture and enrich the border, keeping it moist during the summer from the base to the surface with the aid of mulchings, and the Vines will improve. Red spider will then be more easily prevented taking possession if a genial atmosphere is maintained, ventilation properly conducted, and the syringe judiciously used.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (T. S.).—1, Josephine de Malines. 2, Beurré Diel, good. 3, imperfect, perhaps Beurré Bachelier. 4, not recognisable. 5, Cockle Pippin. (W. W.).—1, French Crab. 2, Keswick Codlin. 3, Jolly Beggar. 4, Hambledon Deux Ans. 5, Court of Wick. 6, Nonesuch. Those are the names as nearly as they can be determined from solitary specimens, all of which are not good representative examples. (J. P.).—1 and 6 cannot be identified. They are probably local and of no value. 2, Warner's King. 3, Adam's Pearmain. 4, Dumelow's Seedling. 5, Boston Russet. (R. C. A.).—1, Not a variety of Orleans, probably a wildling. 2, not known and not worth growing. 3, Denyer's Victoria. There is only one Victoria. It is a Sussex Plum, and was known as Cox's Emperor, but obtained and sent out at a high price as a new variety by a Brixton nurseryman named Denyer. The Plum you refer to as an inferior Victoria is either another variety, or its inferiority is due to age of tree, soil, or position. 4, Denbigh or Cox's Emperor, very good in size and quality. 5, Kirke's, a fine fruit of one of the best of purple dessert

Plums. 6, Probably the Nectarine Plum. We cannot answer your last question at present; it is the first of the kind we have received. (A. J. C.).—Warner's King.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Somerset).—Crataegus glabra is synonymous with Photinia serrulata, the latter being the accepted name. (G. F.).—Passiflora Buonanaparte and Oneidium flexuosum. (A. S.).—We have repeatedly requested that flowers sent for name be not packed in cotton wool. Your flowers were dried almost beyond recognition, but they appear to be Oneidium ornithorhynchum. (J. C.).—1, Saccobolium Blumei; 3, Cattleya gigas; 4, Cattleya crispa. The others were not recognisable, and some small brownish flowers (possibly an Oncidium) were shrivelled up in the cotton wool employed for packing. Please note our request above. (W. F.).—1, Helenium pumilum. 2, Atriplex hortensis. (W., Reading).—A is Cattleya Forbesi. B is a species of Bulbophyllum, which cannot be determined at present, though it has been carefully compared with the specimen of this large and difficult genus preserved in the Kew Herbarium. Possibly it may be yet identified, and if so we will send you the name.

COVENT GARDEN MARKET.—SEPTEMBER 11TH.

No alteration. Market very quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and	0	0	Peaches, dozen	2	0
" Canada, per barrel ..	0	0	Plums, $\frac{1}{2}$ sieve	3	0
Cherries, $\frac{1}{2}$ sieve	0	0	Red Currants, per $\frac{1}{2}$ sieve	0	0
Grapes, per lb.	0	6	Black	0	0
Lemon, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 3	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Mushrooms, punnet ..	0	6
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bushel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches ..	2	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capsicums, per 100	0	0	" Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Caniflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	6	Scorzenera, bundle	1	6
Coleworts, doz. bunches ..	3	0	Shallots, per lb.	0	3
Cucumbers, each	0	3	Spinach, bushel	3	0
Eodive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Leeks, bunch	0	3			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arm Lilies, 12 blooms ..	2	0 to 4	Lilium longiflorum, 12		
Asters, per bunch, French	0	9	blooms	2	0 to 5
" doz'n, English	3	0	Maidenhair Fern, doz.		
Bouvardias, bunch	0	6	bunches	4	0
Carnations, 12 blooms ..	1	0	Marguerites, 12 bunches	2	0
" 12 bunches	3	0	Mignonette, 12 bunches	1	0
Chrysanthemums, dozen	1	0	Myosotis or Forget-me-nots		
blooms	1	0	doz. bunches	1	6
Chrysanthemums, dozen	2	0	Pansies, dozen bunches ..	1	0
bunches	2	0	Pelargoniums, 12 trusses	0	6
Clove Carnations, 12 bunches	0	0	" scarlet, 12 bunches	2	0
Cornflower, doz. bunches	1	0	Pinks (various) 12 bunches	0	0
Dahias, dozen bunches ..	2	0	Poppies, various 12 bunches	2	0
Eacharia, dozen	2	0	Roses (Indoor), dozen ..	0	6
Gallardia picta, 12 bunches	2	0	" Mixed, doz. bunches ..	3	0
Gardenias, 12 blooms ..	2	0	" Red, dozen bunches ..	4	0
Gladoli, per bunch	0	6	" 12 blooms	0	6
Gladiolus brechelegensis,			" Tea, white, dozen ..	1	0
doz. sprays	1	0	" Yellow	2	0
Helianthus, or Sun flower,			Sorrel, doz. bunches	0	0
dozen bunches	3	0	Stephanotis, doz. sprays	2	0
" large, dozen blooms	0	6	Stocks, dozen bunches ..	3	0
Lapageria, 12 blooms ..	1	0	Sweet Peas doz. bunches	2	0
Lavender, dozen bunches	4	0	Sweet Sultan,	3	0
Lilium anatum, 12 blooms	2	0	Tuberose, 12 blooms ..	0	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia St-boldi, dozen ..	6	0 to 12	Fuchsia, per dozen	3	0 to 9
Arum Lilies, per dozen ..	0	0	Geraniums, Ivy, doz. ..	3	0
Arbutus (golden), dozen	6	0	Hydrangea, per dozen ..	9	0
Asters, 12 pots	3	0	Lobelia, per dozen	0	0
Begonias, various, per doz.	4	0	Marquette Daisy, dozen	6	0
Balsams, per dozen	3	0	Mignonette, per dozen ..	3	0
Caladiums, per doz.	0	0	Moss, per dozen	0	0
Calceolarias, per dozen ..	0	0	Myrtles, dozen	6	0
Christmas Rose	0	0	Nasturtium, per dozen ..	0	0
Chrysanthemums, dozen	6	0	Palms, in var., each ..	2	6
Cockscombs, per dozen ..	3	0	Polygoniums, scarlet, 12	2	0
Dracena terminalis, doz. ..	4	0	Polygoniums, per dozen	4	0
Dracaena viridis, doz. ..	12	0	Rhododendron, per dozen	0	0
Erica Cavendishi, doz. ..	0	0	Saxifraga pyramidalis,		
Enonymus, var., dozen ..	6	0	per dozen	0	0
Evergreens, in var., dozen	6	0	Solanums, per dozen ..	6	0
Ferns, in variety, dozen	4	0	Spirea, per dozen	0	0
Ficus elastica, each	1	6	" palmata, per doz.	0	0
Foliage plants, var., each	2	0			



LANDLORDS' FARMING.

MICHAELMAS will soon be here again, bringing in its train much that will cause anxiety to landowners having more farms falling upon their hands, for the cultivation of which capital must be forthcoming out of means already much straitened by what is practically a compulsory reduction of rent; for, whether such reduction has been voluntary or in compliance with the tenants' demands, its cause was beyond the control of either landlord or tenant. To the landlord whose knowledge of farming is of a mere superficial nature the falling in hand of farms must appear a serious disaster, and it is probably owing to some such feeling that the rent upon some estates has been brought down so low as hardly to cover the landlord's liabilities. Anything rather than farms in hand is the feeling to which such an absurd reduction gives expression, but it is undoubtedly as erroneous as it is to suffer land to go out of cultivation. No sympathy have we with any such shirking of responsibility; the situation must be faced boldly, and its difficulties overcome.

Given sufficient capital for the purpose, the chief difficulty consists in reclaiming land out of condition. Well indeed would it be if the clause binding tenant to farm the land in a husband-like manner were more strictly enforced, and tenants made to reform who are found to be "taking it out of the land" by exhaustion of fertility and low cultivation generally. It is unnecessary to dwell upon the folly of a tenant acting in this way, for it is obvious that his interests suffer equally with those of the landlord. If only the land is so porous as to admit of the passage of water through it, if the drainage is sound, the soil clean and tolerably fertile, then, indeed, profitable farming is at once possible; but if the soil is deficient in any of these indispensable conditions to successful cultivation it must be set right at the outset. It is doing this that so frequently renders landlords' farming unprofitable for the first two or three years. Very positive statements are often made that farmed-out land requires at least five years' careful treatment to restore it to a really sound condition. With this dictum we do not agree, for we have proved beyond a doubt that in pure home-mixed chemical manures we have an infallible agent for the speedy restoration of fertility in an economical manner, and which fertility is subsequently sustained by the judicious use of such manures, by the ploughing in of green crops, and by sheep folding.

The selection of the implements and live stock is a preliminary matter to which much thought must be given. To farm profitably under ordinary conditions only from one-third to one-half of the land must be kept constantly under the plough, which means that we can manage perfectly well with half the usual number of horses, less implements, and less men. By a simple calculation we can easily ascertain the quantity of corn required for home consumption for the year by horses, cattle, sheep, and pigs. After the allotment of sufficient land for that purpose we may consider if it is worth while going into the cultivation of corn for sale at present prices. What quantity of corn will the land yield per acre? What will be the cost? What the profit? Compare this with the cost and profit of sheep, pigs, cattle, and dairy farming, allow a safe margin for losses, and there should then be a sound basis for action. What we deplore so much is the blind following of custom, the reckless heedless extravagance which has no guide to action, no plan or purpose, and thus absolutely courts failure.

Be it understood that if less corn is grown, it by no means follows that most of the land is to be laid down to permanent pasture even by landlords. A fair proportion of such pasture there

always must be, with enough long layers and other forage crops to supply home requirements, and for sale if there is a convenient market. Whatever system is followed there must be thorough cultivation of the pasture. It is usually considered that ordinary pasture will not carry more than two or three ewes per acre, but surely it will be granted that pasture may be so much improved, either by sheep folding or an annual dressing of chemical manure, as to carry twice or three times that number. We know that it may—aye, and at a proportionate increase of profit too; but then we avoid the use of farmyard manure, and prefer less costly and more efficient fertilisers for surface dressings. This is a point of especial importance, always to be kept fully in view—*i.e.*, not to enrich or improve the soil at such an extravagant outlay or process of cultivation as to render profit impossible. Judicious economy must be the guiding principle. We must know when and how to spend to advantage, and when and how to save. Where is the good of producing heavy crops if the cost of doing so is so high as to preclude all possibility of profit? It is precisely this blunder which has led to a feeling of prejudice against high farming, but the term is an elastic one, capable of several interpretations.

(To be continued.)

WORK ON THE HOME FARM.

Harvest work is in an advanced state, a few more fine days only being required to enable us to finish the Barley. Spring Beans are the latest crop with us, and though the growth is not nearly so vigorous as that of last year the stalks are well set with full pods. Peas were ready for carting quite as early as winter Oats, and the crop is satisfactory. A stack of Peas near the pig yard is most useful if left unthrashed, and so used not a Pea will be wasted, and the pigs will consume much of the haulm as well. Store pigs are now out upon the stubbles daily, and are driven to water at midday. Plenty of thriving store pigs upon the stubbles is a sign of good management, and when they again come into the yards they may either be finished quickly for the London market, or all or part of them kept for bacon hogs. It is usually found to answer best to sell quickly, as there are other younger pigs to follow, and the sows will consume most of the tail corn later on. As we anticipated, the new Wheat is of good weight, but so far the yield per acre is not satisfactory. We have, however, thrashed so little that a fair estimate can hardly be made. The condition is excellent, and the highest price for the last week in local markets was 3s. per quarter; some Barley realised 36s.

The sowing of green crops for spring is being done as fast as the land can be got ready. *Trifolium incarnatum* sown last month is now up and growing so freely after the recent downpour that the plant will be well established before winter, and will afford some valuable fodder in spring. Rye sown now is of especial value for following the late sown Turnips, and it should not be forgotten that its earliness will depend very much upon the condition of the land, that in fertile soil always being ready for use two or three weeks before other Rye in poor soil. The fact should be clearly understood that early vigorous growth does not depend altogether upon the weather. Much may be done for this crop by a dressing of 1 cwt. per acre of nitrate of soda next February, so that if it is difficult to apply manure now under the pressure of autumn work the nitrate of soda may be depended upon to promote a brisk vigorous growth. Winter Tares and winter Oats will also be sown now before Wheat sowing begins, the Oats often being useful for sheep grazing when spring feed runs short, both the Rye and winter Oats affording a useful crop of grain after the grazing.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 59' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1889.		Baromet. ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperatnre.		
September.			Dry.	Wet.			Max.	Min.	In sun.	On grass	
Sunday	1	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Ir.
Monday	2	30.224	61.2	58.2	N.E.	61.4	73.4	57.2	106.6	54.2	—
Tuesday	3	30.081	64.6	60.5	N.E.	61.2	71.9	54.3	108.2	49.2	0.361
Wednesday ..	4	30.004	62.2	61.2	N.W.	61.8	71.6	60.9	106.8	59.1	0.0.0
Thursday	5	30.138	60.4	57.4	N.W.	61.8	69.9	58.6	110.2	57.6	—
Friday	6	30.243	59.9	57.3	N.W.	61.9	64.3	58.5	72.6	56.0	—
Saturday	7	30.314	61.2	58.3	N.	60.9	70.5	53.5	111.2	48.4	—
		30.212	61.1	58.2	N.W.	60.8	63.1	53.6	102.2	48.4	0.030
		30.174	61.5	53.7		61.4	70.0	56.7	102.5	53.3	0.451

1st.—Fair, but almost sunless. REMARKS.
2nd.—Fine, but frequently cloudy; heavy showers, with frequent distant thunder and lightning from 7 P.M. till far into the night.
3rd.—Dull and damp early; very gloomy and dark from 9 A.M. till 11, and gradually clearing; the afternoon fine and generally bright. 5th.—Overcast all day.
4th.—Cloudy early; fine bright day. 6th.—C cloudy early; bright day.
7th.—Dull till 10 A.M., then bright till 1 P.M.; frequent showers in afternoon and evening. Temperature about 3° above the average, the minimum being 8° higher than in the preceding week, while the mean maximum is exactly the average. The thunderstorm on the night of the 2nd, which was very slight in London, was exceptionally violent and destructive in West Essex, and the rainfall at some stations enormous; at two it exceeded 4 inches.—J. J. SYMONS.



SOME time ago a correspondent, I forget who he was or when he wrote (but that is immaterial), said he failed to see how liquid manure given to fruit trees in the winter could be of any benefit, as the roots were then in a dormant state. In the first place they are not in a dormant state after the leaves fall, though they do not imbibe nutriment from the soil to anything like the same extent as in summer; and in the second place they do not imbibe what they need either in summer or at any other time when the food for which they are hungering and thirsting is not in the soil. That is the condition of thousands of trees in summer and winter. They have been planted for years or generations, and manure may or may not have been placed round their stems from time to time. Be that as it may, the roots have deprived the soil of all that was good for the trees, and gone further and deeper in search of more—seeking, but finding not that which is necessary for their sustenance. They have lived but not prospered, and never can prosper until the impoverished food store (the earth) is replenished—supplied with matter which is essential to their health.

Unquestionably this may be given with great advantage in summer if obstacles do not forbid its application then, and in no other way can it be so quickly effective as in a liquid state. At no period are the roots of fruit trees of all kinds, including Vines, so active as now, and at no period can so much nutriment be imbibed from the soil in a given time when the earth is in a fit state for its reception. It is not in a fit state when it is dry, and I have no hesitation in saying that the best of liquid manure that can be procured does immeasurably less good applied in summer, when the soil, in which the roots are situated or trying to move, is dry, than in winter, when it is moist—not waterlogged, but moist enough for absorption, while at the same time permitting of free percolation, for where water passes through the soil air follows, and there can then be no stagnation. The earth, then, to be in the best condition for the reception of liquid manure, must be moist, yet sufficiently drained naturally or artificially.

During the summer months and at the present moment the earth may appear moist, and is moist, it may be, to a foot or so in depth, even under and near long planted, large, yet enfeebled trees; but below the moist layer in which there are few or no roots, we find on digging the earth is as dry as powder, and it is in this dry under stratum that the chief of the roots are established. This should be thoroughly moistened with clean water, then, and not till then, following with liquid manure. But it is often most difficult, and may be impracticable, to make the impoverished soil moist at this season of the year, in which the roots of starving trees are established; and beyond question the autumn rains and winter snows do the important work more effectively and cost nothing. Then is the time to empty cesspools and pour the contents into the ground; of course, when the surface is in a moderately dry state. At that season of the year the liquid can be given of twice the strength it would be safe to apply it when the roots are in an active state; in fact, it is not easy, I suspect, to give it too strong in winter. Some of the virtues may pass away, but the bulk will be retained by the moist soil, and be imbibed by the roots to the certain benefit of the trees.

I have used thousands of gallons of the contents of cesspools that could only be emptied in winter with the most striking benefit

to all kinds of fruit trees and bushes which only needed sustenance to render them bearers of excellent fruit; as I gained courage from experience the liquid was less and less diluted, and the stronger it was the more marked was the effect beneficially on the trees. If the soil is moist now liquid manure may be given with advantage to fruit trees that obviously need support; but the very strong may need to be somewhat diluted. It is worse than useless applying it to dry soil, as it drains down, leaving little of its virtues behind, and may in passing do injury to some of the roots; but apart from that the practice is wasteful, and therefore should be avoided.

When travelling in Lincolnshire in August I had the pleasure of calling on an ardent gardener and Journal reader, a clergyman and son of the late Canon Hodgson of Hythe. I had known the old espalier and other trees in his garden for years. Many of them had the appearance of being worn out, and most persons of an improving turn of mind, with the means of carrying out their ideas, would have destroyed the old trees and planted young. Some were planted but the old were retained and nourished. I was somewhat astonished to see the change they had undergone since last year, thick deep green leaves in place of the pale and thin; stout short jointed, well-fed wood in place of the weak; large fruit in place of the small, clear and rosy in place of the speckled and sickly hued. This rapid renovation had been effected by liquid manure given strong and plentifully in the winter.

I had exactly similar experience in years gone by, and in the same village. Whether the vicar came to hear of this I know not, or whether he remembered something he had read on the subject, or whether it was a question of wasting the sewage or not, and so he ventured to try it on the old trees, not minding much if he cooked them, I am not able to say, but the fact remains he did pour the strong stuff into the ground when it was naturally wet in winter and the trees leafless, then when the spring came and the summer advanced the sturdy shoots and thick dark leaves, the bold buds, and good fruit told plainly that the food in solution given in winter when the trees were resting was not lost, but retained and appropriated. In no other way could the enfeebled trees have been improved so quickly, decidedly, and cheaply.

It is nearly thirty years since some cesspools on the premises of a gentleman could only be emptied in the winter. The contents were applied to old trees in an orchard, completely saturating the ground, and there was no mistaking the effect of the application. It was then used in the garden, being given to trees of various kinds near walls and in the open that appeared to need extra support; also to Gooseberries, Currants, Strawberry beds, and Raspberry plantations, with the most satisfactory results; indeed, for seven years they had no manure beyond the sewage, and this was only given in winter. The owner of the trees and bushes, and all else who knew them, were satisfied that they became much more healthy and grew far better crops of fruit after being thus treated than they had ever done before, and canker wounds healed freely in some apparently worn out Apple trees that were invigorated in the manner described. To be effectual the application must be thorough, surface dribblings being of little use.—J. WRIGHT.

CHINA ASTERS.

For garden decoration, to yield a supply of flowers, as plants in pots, and for exhibition, few annuals can approach these in usefulness and beauty. They come at a season when many other plants in the flower garden are rapidly losing their attractions; the more fragile annuals provided for an early summer display are usually over, especially if the weather has been hot and dry, and where successional sowings have not been made to provide for the later season flowers are becoming scarce. China Asters have many admirers, and at most of the early autumn horticultural shows

classes and prizes are provided that bring a fair number of exhibitors, yet the plants have not the same popularity they had some years ago, notwithstanding the attention paid to them by cultivators and seed growers, who have greatly improved and diversified the strains or varieties. Large quantities of seed are annually saved in the grounds of the continental growers, especially in the German farms, where so many annuals are grown for seed, which ripens readily under a clearer summer sky and in a higher temperature than those distinguishing our insular climate. All our leading seedsmen have special prize strains with which their respective names are identified; elaborate illustrations appear in the catalogues, and still we do not often see either in gardens or at shows anything approaching to an extensive display, or an adequate representation of their cultural value; yet the seed is cheap, the plants are easily grown, and they do not require much space under glass. At Chiswick this year, as noted last week, a large collection has been grown for trial, the beds and lines of differently coloured varieties constituting a brilliant Aster exhibition, which has awakened the admiration of such visitors as find their way to the gardens at this time of year. It also afforded the opportunity of comparing the different types and groups, and even gave some idea of the advance that has been made with these plants, for while there were some flowers of very high quality there were others but little superior to some of the earliest forms obtained. This shows what care is still requisite to maintain the character of varieties or strains, for though it is easy by continued selection to fix these so that a large percentage come true to colour and character, yet a season's neglect is quite sufficient to upset the work of many years. It is not difficult to induce variation in numbers of plants, but the fixture of the characters obtained is quite a different matter, and the most skilful hybridists find more trouble in this than in any other respect.

The plant with its innumerable varieties popularly known as the China Aster is interesting in several ways, both historically and structurally. In the first place all the diverse forms in cultivation at the present time are the produce of one species, *Callistephus chinensis*, also known to the older writers as *Aster chinensis* and *Callistema hortensis*, and it constitutes one of the best examples of specific variation without the aid of intercrossing with other species that can be named. Then it is quite clear that, in China at least, and perhaps too in Japan, this *Callistephus* has been grown for a long period, and it has often occurred to me that the so-called "blue Chrysanthemum" which has been thought to be an imaginary flower may really be a blue Aster, some of the flat forms of which are much like a reflexed Chrysanthemum. That a blue Aster was long known is evident from the fact this was one of the three colours distinguishing the varieties first introduced to Europe. It appears that some of the missionaries sent seed to France, and d'Incarville is credited with having been the original introducer; at all events the plant had not been long grown in Paris gardens before some seeds were sent to Philip Miller at Chelsea, who has recorded that he first received them in 1731. From these plants were raised with red and white flowers, but five years later seed of the blue variety was obtained; they were all single, and it is rather curious that sixteen years elapsed before seeds of the double red and blue varieties were secured, the double white following in the succeeding year (1753) from Dr. Job Baster of Zirkzee. It is not quite clear whether these double varieties were wholly the result of culture in Europe, but it is probable that several consignments of seed were received from China, and it is quite likely these were found in some of the later supplies. In France, however, the China Aster, or "La Reine Marguerite," as it was there termed soon became a favourite, and was largely grown some time before it attained much popularity here. It was grown at Kew in 1789, but Aiton does not mention any varieties. At the beginning of the present century, however, Martyn states that "besides white, blue, purple, and red, both single and double, there is now another with variegated blue and white flowers." In 1826 Sweet enumerated the following varieties:—*cœrulea*, *rubra*, *alba*, *variegata*, *multiplex* (double), and *brachyantha* (bonnet), which seem to be the same as those already mentioned, with botanical names, except the last one, of which I have not found a description. Possibly it refers to a variety of the type with the central and outer florets of different colours; it can scarcely be the quilled variety that was introduced a few years later. M. C. Bailly's "Manuel Complet du Jardinier" was published in Paris in 1829, and in it he divides Les Reines Marguerites into three groups or varieties. 1, Marguerite double, double Asters; 2, Marguerite naine hâtive, dwarf early Asters; and 3, Marguerite à tuyaux ou Anémone, quilled Asters. He does not say when the last named appeared, but it seems that they were of French origin, though now it is common to style the quilled varieties German and those with flat florets French Asters. This was a very important break; the earliest introduced forms had the usual so-called single blooms of

wild members of the Compositæ family—namely, small central tubular yellow florets and flat outer or ray florets. In the process of "doubling" under cultivation the ray florets were increased at the expense of the central florets, so that the perfect double bloom of the florist consisted entirely of flat florets more or less symmetrically arranged in an imbricated manner. The reverse had taken place in the production of the quilled varieties, the tubular florets being much more largely developed, becoming variously coloured, and either excluding all the other forms of florets or leaving only an outer marginal row termed "guard petals." This change was so great from the other type that it must have taken a considerable time to effect, but as the China Aster had been grown in France for at least a hundred years when this quilled variety was announced by Bailly it is quite likely to have been obtained by a long course of selection. This variety was soon introduced to England, for Phillips in 1829 records the appearance of one "consisting entirely of quilled florets."

From this time onwards increasing attention was paid to raising these Asters from seed on the Continent, and there is no doubt that most of the distinct types and numerous bright, soft, and beautiful colours are due to the efforts of French and German seed growers, and from them we still obtain the bulk of the seed used in this country. Attempts have, however, been made to raise seed on a large scale here, and one of these experiments, which for a long period proved exceptionally successful, and resulted in a wonderful improvement of the beautiful quilled varieties, was that conducted by Mr. Betteridge at the Aster Nurseries, Chipping Norton. For over thirty years Asters were largely grown there, the commencement being made in the spring of 1845, when a pinch of seed was purchased of Butler & McCulloch in Covent Garden, and from the plants then raised the best were selected, the process being repeated year after year, but for ten years Mr. Betteridge has said little progress was made. After that time results became more satisfactory, and in the next twenty years upwards of fifty distinct and good varieties were raised, a large proportion being certificated at the Crystal Palace and provincial shows. Special attention was paid to the quilled type, and some charming forms were secured in the group remarkable alike for their high quality as viewed from a florist's standpoint and for the diversity of colours. In 1873 four excellent varieties were sent out by Messrs. Sutton & Sons of Reading, and in the following year Messrs. J. Carter & Co., High Holborn, purchased the whole of the seed of the current year. In the four succeeding years many other improved varieties were certificated and sent out, then several unfavourable seasons occurred for harvesting seed, and one of the last of this strain that was brought into prominent notice was Fair Rosamond, a beautiful variety with pure white central florets and dark purple guard florets, which appeared in 1881. At one time as many as 120,000 plants were grown at Chipping Norton for seed, and the effect produced by long beds 4 feet wide planted with differently coloured varieties can be imagined, but the uncertainty of our climate renders seed-saving somewhat precarious, particularly when it cannot be harvested before autumn, and this no doubt ultimately rendered Aster culture unprofitable.

It is a curious fact that amongst the many hundreds of plants for which the Floral Committee of the Royal Horticultural Society have awarded certificates since 1859 only two China Asters have been honoured—namely, Unique (Gilkes, 1876) and Dark Scarlet (Benary, 1886), until the meeting at Chiswick on September 5th of this year, when the certificates adjudged for varieties tried in the gardens may be considered as of more comparative than absolute value, though regard is paid in such selections to the individual merit of the varieties distinguished. This was the third Aster trial at Chiswick, for in 1877 an extensive comparison of varieties and strains took place when seed was received from Messrs. Carter & Co., E. G. Henderson, Wheeler & Son, Vilmorin et Cie, Dippe Bros., Haage and Schmidt, R. Dean, and Benary. Thirty-two types were tested, and in the result the following groups and characters, slightly modified to agree with present types, were adopted under which they were arranged, several of these being in twelve distinct shades of colour.

Chrysanthemum-flowered Asters.—Flowers mostly large, often exceeding 4 inches in diameter. Florets broad, flat, sometimes recurved, so as to raise the centre. Plants of compact growth, 9 to 12 inches high, slightly branching; blooms on erect strong stems.

Victoria Asters.—Taller forms of the above type.

Emperor Asters.—Blooms large, florets broad, flat, and resembling the Chrysanthemum section. Plants seldom branching, a single bloom being borne on each stem. Robust growth.

Pæony-flowered Asters.—Blooms large and full, florets broad and incurved, forming in the best examples globular blooms 3 to 4 inches in diameter. Plants 18 to 24 inches high, slightly branched and free.

Globe Asters.—Intermediate between the Chrysanthemum and

Pæony-flowered; blooms large, but often rough and rather drooping. Plants 15 to 18 inches high.

Pompon Asters.—Blooms of medium size, neat, and close; the outer florets flat, the inner quilled. Plants compact, branching, habit free; height 12 to 15 inches.

Bouquet Asters.—Blooms of medium size, 2 to 2½ inches in diameter. Plants small, compact, 6 to 7 inches high; free.

Shakespeare Asters.—Blooms small, early. Plants dwarf, 4 to 6 inches high.

Honeycomb Asters.—Blooms large, flat; florets tubular at the base, but flat at the top. Plants of medium growth.

Needle or Hedgehog Asters.—Blooms large, flat; florets tubular and close pointed. Plants of medium growth, 15 to 18 inches; free.

Quilled Asters.—Blooms drooping, somewhat globular, even, and regular, 2 to 3 inches in diameter. Central florets regularly quilled, with an even five-lobed limb; outer florets flat. Plants tall, straggling, 2 to 2½ feet high. Late. Useful for cutting.

In 1888 a trial of Asters was undertaken at Chiswick, when Messrs. Benary, Vilmorin, Dobbie & Co., and others contributed seed. The varieties were grouped under seventeen classes, including most of the preceding with a few others. The very distinct variety Comet was grown on this occasion; it is one of the Chrysanthemum-flowered type, with flat florets, white edged with rose.

Under some of the preceding most of the new varieties now grown can be readily grouped, but at the trial this season a few fresh types have been introduced. Some of the best of these are as follows:—

Imbricated Pompons, with regularly formed blooms, the florets imbricated, dwarf, and compact, not exceeding 12 inches in height; the colours varied, rich, and distinct. **New Liliput.**—Blooms of good shape, quilled, some with light guard florets, and rose centre; others with crimson centre or white; plants dwarf, 9 to 12 inches high, free, and useful for pot culture. **Victoria Needle.**—Blooms closely quilled, the tubular florets narrow, even, forming a fine semi-globular head, crimson, and purple shades good. **Coeur-deau or Crown.**—This is not a new type, but an excellent strain was grown, the blooms variously coloured with white centres. Height 20 inches. **Dwarf Pyramidal.**—Blooms varied in colour, of good shape, compact, free, and even in habit; 12 inches high. It may be added that some of the very dwarf varieties are most unsatisfactory, usually irregular in habit, and with blooms of little substance. The best blooms are produced by the tall or medium height varieties, and for cutting purposes these are useful. The so-called bouquet Asters are not so good as the others, the blooms coming in a bunched form, and losing their individual characters. Most of the strains are offered by seedsmen in distinct colours, but the mixed strains are now so carefully selected and so reliable that all the best shades are obtained from a packet of mixed seed.

In the culture of China Asters the most important point is to ensure having sturdy plants for placing out of doors, as weaklings will never give satisfactory returns. The seed is often sown in heat; at one time this was the general practice, but a better plan is to sow the seed in pans of light soil, and place these in cold frames about the first or second week in April. Mr. Betteridge used to sow the seed in drills in cold frames, subsequently pricking out the young plants a foot apart in similar frames. The seedlings are usually large enough for transferring to other frames or beds in a fortnight or three weeks from sowing, and they can be transferred to the beds out of doors as soon as they have made good progress and the weather is favourable. They require a rich well-dug soil and frequent supplies of water in dry weather; but in their early stages when under glass care must be exercised in watering, as in common with many other plants they are very liable to damp off in a young state. In the beds a foot to 18 inches between the plants and rows is sufficient, the small-growing sorts requiring less space. Exhibitors usually shade their blooms with some light material, and thin them to about half a dozen to each plant. For pots plants can be grown in the same way, lifting and transferring them to pots early in September, as if well shaded and watered they suffer but little if care be taken to preserve the roots. These plants are useful in conservatories and greenhouses during October, and often indeed until the November-flowering Chrysanthemums are at their best when Asters are no longer required.—L. CASTLE.

TREATMENT OF SOILS AND MANURES.

As Mr. Bishop's second article, page 173, on the above subject is more confused, if possible, than the first, many of the sentences being unintelligible, I shall limit myself to a reply to his last communication, page 229. I am sorry to have offended him by quoting an old Latin adage, which certainly does not directly refer to manures or cultivation, but nevertheless gives, metaphorically, very good advice to anyone, however skilled he may be in his own

business, who attempts to advise others on subjects as to which he is unable to measure his own ignorance. I translate the adage for the benefit of Mr. Bishop, "Let not the cobbler go beyond his last."

It is difficult to discuss a question with Mr. Bishop because he repudiates all authorities, and sets his own experience against that of the scientific world. Although I have cultivated plants for about sixty years, during fifty of which I used only stable manure, yet I think it possible that others who have made the study of plants and their food the business of their life may have something to teach me, and acknowledge their authority, consider myself quite justified in quoting them even when they are antagonistic to one so experienced as Mr. Bishop.

Mr. Bishop denies that carbonic acid and carbon dioxide are the same, and asserts that the formula of the former is H_2CO_3 , and of the latter CO_2 . He must be a phenomenal genius if he evolved out of his own experience the formula H_2CO_3 for carbonic acid; but as this is scarcely credible I must assume that in this case he condescended to consult some books on chemistry. It was reasonable to believe, as he was addressing gardeners "who were not scientific," that he would use terms according to their popular acceptance. "Chambers' Encyclopædia," a popular authority, states that carbonic acid is a substance occurring free as a gas in the atmosphere, &c., with the formula CO_2 , and nothing whatever of the hypothetical carbonic acid with the formula H_2CO_3 , while Watts in the "Dictionary of Chemistry," a scientific authority, states, "Two oxides of carbon are known, the protoxide CO and the dioxide CO_2 , commonly called carbonic acid;" but in another paragraph, that water in which gaseous carbonic anhydride (CO_2) is dissolved possesses acid properties, from which it may be inferred that it contains an acid of the composition H_2CO_3 , but this acid cannot be isolated, and as a definite compound cannot be said to be known. Mr. Bishop must have very minutely searched the authorities, notwithstanding his want of faith in them, to have discovered this mysterious H_2CO_3 , which very few have heard of, and no one has caught. I must have others to decide which of the two, Sachs or Mr. Bishop, is the more trustworthy authority as to the source of carbon in plants. If the latter had known anything of the law of the diffusion of gases, familiar to every tyro in chemistry, he would not have committed himself to the nonsense of asserting that by the wise provision of Nature the carbon dioxide falls to the ground because of its greater weight. If it were so animal life could not exist on the surface of the earth, as the stratum of air then would consist mainly or entirely of carbonic acid. I recommend to him the very simple test of filling two jars with carbon dioxide and air respectively, and then superimposing mouth to mouth, the jar containing the air upon that filled with carbon dioxide, he will find that in a short time the heavier gas in the lower vessel ascends and displaces the lighter air in the upper vessel, while the lighter air descends into the lower vessel until the two gases are evenly distributed in both.

Mr. Bishop states it to be pure assumption on my part "to suppose that carbon is taken into the plant in this form (what form?) and thrown off without being utilised." The sentence is unintelligible, and certainly does not express anything written by me. I suppose he refers to my quotation from Sachs; if so, the assumption is not mine, and, further, he misreads Sachs, who states that "the enormous quantity of carbon, about half of the whole substance of the dried plant, is derived from the carbon dioxide of the air." Where have I stated that the carbon was "thrown off without being utilised?" What more real utilisation could there be than for the assimilation of the carbon by the plant? As the whole of the carbon of the plant was accounted for by Sachs, the "other half" exists only in the imagination of Mr. Bishop. I pointed out the absence in Mr. Bishop's original communication of phosphorus from "his four principal elements necessary for plant growth," he now informs us that "he had stated six organic elements to which phosphorus belongs," from which it may be observed that in his opinion phosphorus, carbon, nitrogen, sulphur, oxygen, and hydrogen are organic elements. What does he mean by this term? An organic element is something unknown to me; perhaps he will enlighten my ignorance, which supposed the usual division of the elements to be into metallic and non-metallic, or into metals and metalloids.

I have again to complain of Mr. Bishop's misquotation. I did not say that "hundreds of thousands of pounds are spent on phosphorus when nothing is spent on potassium, magnesium, calcium, and iron for manure." The latter half of the sentence should read "comparatively little on magnesium and iron." It would have been absurd to say that nothing was spent on potassium when very large sums are annually expended on kainit, potassic sulphate, chloride, and nitrate, &c.

Mr. Bishop denies that he said stable manure was very uncertain. His actual words are, "There is ten times more nitrogen

in manure that has been properly prepared than when neglected. If left long exposed most of the more valuable elements escape, and removing such manure to the land is like taking your purse to the bank with no money in it. How many think of this? Is not this an admission that stable manure as usually applied to the land is very uncertain?

I am well aware of the great value of stable manure and of its abundance and cheapness in London, which may explain why so little artificial is used in proximity to the metropolis; but the country generally has not a supply either so abundant or cheap, consequently there artificial manure is much more economical, for it is far from exaggeration to assert that 1 cwt. of a properly compounded artificial manure is more than equivalent to 2 tons of the best stable manure; it produces as good or better crops and does not impoverish the land. The vulgar error as to impoverishment originated from the improper use of nitrogenous manures, such as sulphate of ammonia and nitrate of soda by themselves; even when so used they impoverish the soil only in the sense that they enable what is in it to be taken out in a shorter time. No land can be cropped continually without impoverishment if the phosphorus, potash, &c., taken away in the crops be not restored to it. If phosphorus, potash, &c., had been added to the nitrogenous manures there would have been no complaint of impoverishment.—EDMUND TONKS.



THE ORCHID ALBUM.

THE eighth volume of Mr. B. S. Williams' Orchid Album is just completed, and contains forty-eight excellent coloured plates of even more varied character than the preceding volumes. Twenty-seven genera are represented, some of the largest having several plates each; thus there are four *Cattleyas*, six *Cypripediums*, four *Laelias*, six *Odontoglossums* and four *Oncidium*s. The illustration of *Odontoglossum Harryanum* is a good one, but that in which *Odontoglossum eugenes* is depicted is exceptionally beautiful. The colouring in all has been very carefully done and the plants are faithfully represented. The descriptive and cultural notes are full, practical, and useful.

DENDROBIUMS.

As these complete their growth it is important more light and air be admitted to the plants to barden and ripen their pseudo-bulbs. Frequently they are kept after they have lengthened out their growths in too close and too moist an atmosphere, which has the effect of starting them again into growth. This is not all, for the foliage often commences dying towards the tips prematurely. This is unnatural, and should be prevented. Plants that lose their foliage in the manner indicated seldom mature their pseudo-bulbs as thoroughly as they ought to do. Retain the leaves upon the plants until they assume a ripened hue, and then turn yellow and die away naturally. Evergreen species are often seriously disfigured by half of their foliage dying away through being grown in an atmosphere that is overshadowed and nearly at the point of saturation. The moist atmosphere and liberal supplies of water that these plants need during active growth have in many cases led to excess. In all cases where growth is complete and ripening has commenced do not withhold water suddenly so as to check them, let the supply be gradually diminished, and the same care should be taken in giving them a lower temperature. Plants of *D. crassinode* that have been grown in a moderately light dry structure have made thick firm growths 18 inches to 2 feet long, and are now being fully exposed to the sun in a cool house where air is admitted abundantly during the day. *D. Wardianum* we are exposing in vineries for the present, where the foliage is thin and light can penetrate freely to the plants. *D. nobile* and its forms are standing on a moisture-holding base in the greenhouse fully exposed—that is, all that have completed their growth.

Such species as *D. moschatum*, *D. Calceolus*, and other strong growers require thorough ripening, and in order to accomplish this they must be freely exposed as early in the season as possible—directly, in fact, that they have lengthened out their growths and attain a little solidity. The free-growing *D. chrysanthum* is charming when well and profusely flowered, but when subject, as is too frequently the case, to stove treatment the whole year through, the flowers are few in number in comparison with plants that are given distinct seasons of growth and rest. When kept in the stove

this plant is almost a perpetual grower, and increases rapidly, but its growths soon become thin and puny. There are two distinct forms of this plant, the one having longer and thicker pseudo-bulbs than the other, and flowers for 18 inches or more of its length. The flowers are the same. The stronger grower is deciduous, while the other under the same treatment retains a portion of its foliage. The one shows its flowers as soon as the growth attains a fair amount of solidity, the other not until it is ripened and has lost its foliage. Where growth is completed give the plants the same treatment as *D. Wardianum*, and prepare them for a thorough season of rest.—ORCHID GROWER.

IN THE MIDLANDS.

SMITHS' OF WORCESTER.

So familiar is the above designation of a famous nursery, and so naturally does it come to the lips and the pen, that the "precisely proper" may stand aside for once, and the popularly expressive take its place for the purpose of this brief description. No one, presumably, who is interested in horticulture, and having an hour to spare in the historic city, would fail to run down by tram or otherwise to the great and diversified nurseries of Messrs. Richard Smith & Co. at St. John's. Those who have been before will be ready to go again and be gratified, while those who have not yet had the privilege of seeing what is to be seen there may make up their minds to be astonished. It is not too much to say that "Smiths' of Worcester" is one of the great nurseries of the world, and its owners rank amongst the most enterprising; indeed, it is a combination of enterprise with excellence that has made the business what it is to-day.

On intimating to a leading gardener in the Midlands my intention of calling at Worcester, he at once said, "Certainly you should not leave the county without seeing Smiths'; it is a splendid nursery, as much like a gentleman's garden and pleasure ground as a trade establishment, in respect to its cleanliness, order, and the high culture displayed everywhere." I found the description correct. Under glass and outside, in the plant, evergreen, deciduous tree, and shrub departments; in the extensive acreage devoted to fruit trees, Roses, and Dahlias, all was alike satisfying, from whatever point of view regarded.

"I suppose you do not want to go all over the nursery," observed the courteous attendant, quickly adding, "you can if you like, you know; but I fear you would find it fatiguing." No doubt he was right. The central walk flanked with borders of choice evergreens is, I think, more than a mile and a half long, and there are dozens of parallel paths, and dozens more of cross sectional alleys for passing between the trees, making in the aggregate forty-two miles of walks that traverse the 200 acres of the enclosure.

And yet within the present century the foundation of the gigantic business was laid in a plot of four or five acres. Now about the same extent of ground is occupied with low pits and frames, in which small choice evergreens are raised and established in pots in scores of thousands—Ivies, *Euonymuses*, *Elæagnuses*, *Hollies*, *Aucubas*, rare *Conifers*, *Acacias*, *Libonias*, *Choisyas*, *Rhododendrons*, *Azaleas*, *Clematisses*, and various others, all "sized," so to say, and attractive by their freshness and uniformity. Then there are the houses, thirty of them, one being nearly 400 feet long, and one or other of them containing plants of every description in demand in gardens. It is evidently a great plant-manufactory, reminding in some respects of the Belgian establishments, but far larger, and in every way better than the great majority of them. A glance suffices to show the superiority of the *Azaleas* and *Camellias* to the pampered and fed-for-sale continental plants, which can scarcely be kept alive after the first season, while the home-raised and differently grown, with fair treatment, go on improving, and are decidedly the cheaper in the end. This purchasers appear to be finding out, for the demand is ever increasing.

Amongst other plants which catch the eye in passing are some hundreds if not thousands of *Pimelca spectabilis rosea*—models in health and symmetry, a houseful of that not easy to raise plant *Phenocoma prolifera Barnesi*, a great block of *Libonia Penrhosiensis* which places the more familiar *L. floribunda* quite in the background, a similar bank of *Statice Butcheri*, decidedly one of the best of the genus and of greenhouse plants; a houseful of seedling *Lapagerias*, several distinctly meritorious; numbers of the bright yellow *Cassia corymbosa*, flowering in 5-inch pots; and in contrast a splendid collection of Ferns, including a houseful of *Adiantum farleyense*, but not a houseful of the recently certificated *Pteris tremula Smithiana*, with its crested fronds, which we may be sure will be increased as rapidly as possible, and no doubt wanted as fast as it can be provided; a number of plants of the free and elegant *Asparagus comorensis*, an advance on *A. plumosus nanus*. Such are some of the plants that arrest attention under glass, but not less so perhaps than the 6000 Vines in pots that will soon be ready for distribution.

But large as are the stocks of different kinds of plants in pots that are in chief demand, the chiefest are the *Clematisses*. Surely this must be the great emporium of these handsomest of hardy climbers. The majority are plunged over the rims of the pots in the open quarters, sturdy, hardy, ready for delivery and planting. Whence such numbers go every year is a marvel, but they do go. Thousands are already sold, and only await the condition and time when they can best be despatched to the purchasers. Numbers smaller are coming on, and amongst those

under glass is a variety regarded with extraordinary solicitude—a real genuine white form of *C. Jackmanni*, exactly similar to the type in character, and equal to it in freedom of growth and floriferousness—a true and good companion long sought for of the old favourite, and not hitherto found as possessing the coveted characteristics. Plants in small 48-size pots were bearing from fifteen to seventeen blooms, and budding at every joint produced. The new variety is not yet named, and it is hopeless for anyone to expect plants at present. Many thousands will doubtless be raised before one is sold, for offering it until the stock is very large could only end in disappointment. There are plenty of others, however, of all the best varieties in commerce, the stock amounting to 100,000 plants.

Now we pass quickly down the nursery, and find something of interest on every hand. Here are Tea Roses in pots flowering freely and in great variety, and there are twenty acres of all sorts planted out. Now we come to bright rows of golden Lilac, and next to bluish silvery masses of *Pinus nobilis glauca*; then acres of the sombre Austrian Pine, of which they "cannot get too many," relieved with *Cedrus atlantica glauca*, a particularly fine form, for they vary, and thrifty young trees of *C. Deodara alba spica*, distinct in hue from all other varieties of this elegant Conifer. Next we came to large "breaks" of Laurels, the *colchica* variety being in great demand, since "rabbits eat all others but leave this alone"—a hint for persons who are planting evergreens where these voracious animals abound. And so we may go on picking up hints and admiring scores of things till the memory becomes overlaid; but a golden mass of *Hypericum* cannot be forgotten, including the densely flowered *H. prolificum*, and the free flowering and red fruiting *H. cypripedium* and *H. elatum*, which are so effective for mounds and rockeries.

The nursery is particularly rich in ornamental trees, some remarkable for their enormous green leaves, such as the Balsam Poplars, others for their striking colours—the purple *Prunus Pissardi*, and the bright golden heads of *Ulmus Dampieri aurea*, the dark bold leaved *Acer Schwedleri*, one of the finest of trees, with the upright growing *Populus Bolleni*, nearly as close as a Lombardy, and the under sides of the leaves silvery white; while gold and silver Sycamores are not excelled in clearness and marking by any tropical plants that are grown in stoves. Judiciously arranged, such trees as those mentioned, and many more, are capable of imparting beauty to, that is now absent from, many pleasure grounds and home plantations.

There yet remain the fruit trees, 74 acres of them, that will bear inspection, and are worthy of it. The popular varieties have to be provided in great numbers to meet the yearly demand, and nowhere can we better learn which are the most popular than in a nursery like this. Taking Apples, we find on inquiry that Ecklinville Seedling has come quite to the front, now equalling Lord Suffield with a sale of 6000, while Worcestershire Pearmain, Cox's Orange Pippin, Stirling Castle, Golden Winter Pearmain (the correct name of the variety known as King of the Pippins), Warner's King, and Blenheim Orange are only each 1000 less; Keswick Codlin, Irish Peach, and Dumelow's Seedling next following with 2000 to 3000 each. Victoria heads the poll amongst Plums with between 4000 and 5000, the next most in demand being the Early Prolific, Czar, Kirke's, Pond's Seedling, Cox's Emperor, Jefferson's, Prince Englebert, and White Magnum Bonum with 2000 to 3000 each. The same number of the following Pears are required—namely, Williams' Bon Chrétien, Souvenir du Congrès, Jargonelle, Louise Bonne of Jersey, Marie Louise, Pitmaston Duchess, and Winter Nelis. There is an equal demand for May Duke, Morello, Bigarreau, Black Heart, and Governor Wood Cherries. Amongst bush fruits it is remarkable the distinct lead Woburn's Industry has taken amongst Gooseberries, the annual sale being 50,000; Crown Bob, Lancashire Lad, Whitesmith, and Ashton Red not exceeding 4000 each, the same numbers being required of the Champion, Naples, and Lee's Prolific Black Currants; also of Red Grape and Victoria, the White Grape also being in great demand. It is satisfactory to find the fruit-growing public judging so well in the selection of varieties, and it can only be a question of time, and not a very long time either, when the supply of home-grown fruit must be greatly improved.

A feature of interest to many must be noted amongst the fruit trees. In a quarter of young Apples seeds of Mistletoe had been attached to the base of the branches; how and when I cannot say, and my guide "could not tell me," and I did not expect he would if he could, as perhaps he might if he had tried. It was his business not to try, and it is mine to record that Mistletoe trees will soon be plentiful, for hundreds of seeds were germinating freely, and healthy growths were extending, some of them with a pair or two of leaves, others more. Last year a standard Mistletoe bush was figured in the Journal as grown by Mr. Van Geert at Antwerp on the Thorn. Similar trees, but on taller stems of Apples, are in fair progress at Worcester, and when ready for removal there is not the least doubt there will be plenty of people ready and even anxious to possess them. The culture of the interesting parasite in the nursery bids fair to be very successful.

Time flies and space vanishes, and it can only be said that 5 acres of ground are devoted to herbaceous plants, and apparently about the same to Dahlias. They were in splendid bloom and great variety, brightening as no other flowers can gardens and pleasure grounds in the autumn months. Yes, a little more can be said, has been said, and may be said again in better terms than I could choose. A *ci-devant* correspondent of the Journal once visited Worcester—the learned and genial "Wiltshire Rector," who after saying what he had to say on gardening, devoted his attention to pigeons and birds. May they long afford him

pleasure and be delight to others. His concluding words in describing his visit shall be the concluding words here, for they are good and true—"St. John's Nursery is an indirect proof of the prosperity and refinement of the English people of this day. In war and in rude times men had no leisure or care, or even thought, for ornamenting their parks, shrubberies, and gardens. There might be an exception here and there, as in John Evelyn, but there are hundreds of John Evelyns now—men, aye! and women in abundance, who delight in the beautiful in tree and shrub, and who lovingly regard the form and colour of leaf and flower. Gardening best prospers in quiet times, as now in England. Long may they last. I can only say that St. John's nursery is, as I had been informed, 'a marvellous place,' and as seeing is believing, now I believe, and must add, far from being over-praised, it was the opposite." There is the justification for my foregoing remarks, and my last words are words of acknowledgment, justly due to principal and officials for making the short time a pleasant time as spent in the famous establishment.—W.

ATHANASIA ANNUA.

SEVERAL shrubby evergreen species of the genus *Athanasia*, natives of South Africa, are known, and occasionally but rarely they are seen



FIG. 32.—ATHANASIA ANNUA.

in greenhouses where collections of scarce or interesting plants are grown. One *Athanasia*, however—that named above—is of annual duration only, and was at one time a rather familiar occupant of English gardens. It is a native of North Africa, chiefly in Barbary, and succeeds out of doors in this climate during the spring and summer months. The whole plant is rather fleshy in structure, like many other members of the Compositæ. The leaves are pinnatifid, and the florets tubular in close fleshy heads, these again being clustered in dense corymbs suggestive of some of *Achilleas*, especially *A. aegyptiaca*, but the individual heads are more prominent, and the corymbs are consequently not so flat. When cut the flower heads last for a great time in water, and even when

cut and placed in a cool position they remain fresh for more than a week out of water. The plant succeeds in any light well drained soil, and is raised from seed sown in early spring.

RHUBARB.

BEFORE the growing season closes I think I had better work off my remaining notes on Rhubarb. In April I had something to say about a few varieties of Rhubarb, and chiefly of early Rhubarb, and my dissatisfaction at the apparent confusion there was in the nomenclature of those early Rhubarbs. By the kindness of the Editor I was made the happy possessor of "Handy Andy's" variety, Tokolsk, and, later on, of the true early Chiswick Red from Mr. A. F. Barron of the Royal Horticultural Society's Gardens. In the course of the summer I had also a variety of Early Red sent to me by Mr. Lister of Darnall, who grows Rhubarb largely for the Sheffield market. Just lately I have introduced into my garden the Vicar of Yaxley's early Rhubarb; so that, by comparing these varieties one with another, as they are growing together all in one garden in relative positions in our central midland neighbourhood, and that if we are spared over one or two or three seasons, I ought to be able to get a little light on the much-vexed questions, as (first) which is the earliest variety grown? and (second) what is the correct name of that variety? with other kindred matters.

If I could I might turn my place largely into a trial ground for Rhubarbs, for those of my neighbours, some near and some distant, who have been raising seedling Rhubarbs, now and in the past, are anxious that I should have specimens of their best that I may compare them with other varieties. As my space is limited and my garden demands heavy and continuous, I am obliged to decline their very kind offers. What I say to them in part, in reply to their generous offers, I think I ought to say here, because I consider it is whatever Rhubarb raiser and grower ought to study closely. In these, or like words, I say, "As nearly every quality desired in Rhubarbs is in some one or other of present day varieties, especially size, colour, substance, and flavour, the attention of all Rhubarb raisers should now be given to the very important point of earliness." The raiser who produces a variety which will add a week, or a day even, to the production of natural Rhubarb will do good to his profession, the people at large, and, let us hope, bring a substantial recompense to himself. Earliness then, combined with present good qualities is the great desideratum.

In my notes in the *Journal of Horticulture* of April 4th, page 270, I mentioned a variety of Rhubarb much like Hawkes's Champagne, which had been submitted to me for trial by Mr. Lister of Darnall, and which he calls Cherry Red. I said that I should watch it closely and report on it. I have done so, and I can honestly say that as a private establishment Rhubarb it has the finest points, notably the one of flavour, which a Rhubarb can have. Here they are:—1, Earliness; about the earliness of Hawkes's Champagne. 2, Size; medium; greatness of size not desired by good cooks. 3, Substance; crisp and sweet. 4, Colour; brilliant cherry red, and all through. 5, Flavour; none to touch it. With respect to that last and most essential quality for a gentleman's household Rhubarb, I may say that I sent some of it into the kitchen one day when Rhubarb was ordered for stewing, with the request that they would try it, and send me word what they thought of it. The reply next day was, "It was very good; the highest flavoured Rhubarb we have had in; it has rather a lemony flavour." I need not add anything to that, except that a certain housewife who shall be nameless here, though she is the chiefest amongst women, says to her "housebond" one day, "I wish you would let me have some of that Rhubarb which you sent me in the last time, I like the flavour so much." That Rhubarb was Cherry Red. These testimonies settle the matter as to flavour.

Concerning this Rhubarb its raiser, Mr. Lister, has given me a very interesting note on its history, which I will give in his own words. In a letter to me dated May, 1889, he says, "A few years ago I submitted a sample of my seedling Rhubarb to one of the partners of a firm of nurserymen, and after he had tried its quality and pronounced it 'very good' he wished to have a root or two. I sent four roots, so that they might force one or two and grow the others. When the firm had tested its growing qualities they asked me if would sell them a hundred roots, and as I thought it was better adapted for private than for market purposes, and thinking it would introduce it amongst gentlemen's gardeners, I let them have a hundred roots. They wanted a name, and at that time I gave them, what I thought would describe it well, 'Best of All.' The following year, however, they advertised it in their catalogue (as you will see in the copy for 1887, which I send you) at 2s. 6d. per root, under the name of 'Prima Donna, the finest flavoured

variety in cultivation.' I mention this to you, so that if you meet with a Rhubarb called Prima Donna you will know that it is my Best of All, or what I now call Cherry Red."

I will leave until next season, for further consideration, the question of Rhubarb.—N. H. P.



CENTENARY CONFERENCE AND EXHIBITION.

THE programme and schedule have just been issued of the Royal Horticultural Society's Chrysanthemum Conference and Exhibition at Chiswick on November 5th and 6th next, to celebrate the centenary of the introduction of the Chrysanthemum into Europe. It is stated that "the object of the Conference is to get together as large and as representative a collection of Chrysanthemums of all descriptions as possible; to form an exhibition of all subjects pertaining to the Chrysanthemum, whether in its botanical, its horticultural, its literary, or its artistic aspects; and to bring together for the purposes of reciprocal information and fellowship all those interested in the Chrysanthemum and its culture. To carry out these ends the assistance of all lovers of the Chrysanthemum is invited."

A Committee of fifty-four members has been formed, T. B. Haywood, Esq., being the Chairman, and Mr. E. Molyneux the Secretary; the Executive Committee comprising Messrs. A. F. Barron, L. Castle, N. Davis, J. Douglas, Shirley Hibberd, W. Holmes, R. F. Jameson, J. Laing, W. Mease, C. E. Pearson, R. Parker, G. Paul, H. J. Veitch, E. Wills, J. Wright, W. Wildsmith, and Rev. W. Wilks.

The schedule comprises twelve classes for plants, trained specimens, conservatory plants, and groups, the remainder of the thirty-six classes being devoted to cut flowers, new varieties, and appliances for growing and showing Chrysanthemums. The programme of the Conference is as follows, the proceedings to commence each day at 1.30 P.M. First day, Tuesday, November 5th:—1, Opening Address by the Chairman, T. B. Haywood, Esq. 2, Summarised History, by Mr. H. Payne. 3, New Varieties, by Mr. E. Molyneux. 4, Judging Chrysanthemums, by Mr. J. Wright. 5, Progress in Chrysanthemums, by Mr. Shirley Hibberd. Second day, Wednesday, November 6th:—1, Chrysanthemum Seed and Seedlings, by Mr. F. W. Burbidge. 2, Dwarfing and Grouping Chrysanthemums, by Mr. C. Orchard. 3, Market Chrysanthemums, by Mr. C. Pearson. 4, Summer and Early Autumn Chrysanthemums, by Mr. W. Piercy. Schedules can be had on application to the Rev. W. Wilks, 117, Victoria Street, W., or to Mr. E. Molyneux, Swanmore Park Gardens, Bishops Waltham. Forms are also furnished for statistical returns, to be subsequently classified and embodied in the Journal of the Society.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE Conference held at St. Stephen's Hall, Westminster, September 11th, and to which we could only allude in a few words last week, was a satisfactory gathering, the papers read and the discussion evoked bringing out many interesting and important facts. Some sixty persons were present, amongst them being Mr. E. Sanderson, Mr. W. Holmes, Mr. W. Piercy, Mr. G. Gordon, Mr. L. Castle, Mr. H. Cannell, Mr. Falconer Jameson, Mr. Harland (Hull), Mr. E. Beckett, Mr. H. Shoemsmith, and Mr. A. Dean.

In the absence of the Chairman and Vice-Chairman of Committees Mr. W. Holmes was requested to take the chair, and he opened the proceedings with a few appropriate words, calling upon Mr. Piercy for the first paper on "Early Flowering Chrysanthemums." This was followed by a communication from Mr. T. Turton, Maiden Erleigh Gardens, Reading, read by Mr. A. Dean, who had seen the collection of early Chrysanthemums in the garden named at the end of August, and had been much impressed by the fine display they afforded. Mr. G. Gordon next contributed a few remarks upon Mr. Piercy's paper, in the course of which he suggested as a means of obtaining brighter-coloured varieties that crosses and seed might be procured between the latest of the late-flowering varieties and the earliest of the early ones. These could probably without much difficulty be had in flower together, and at a time of year when it would be most likely that seed could be procured. He further observed that for seed-bearing purposes it would be advisable to grow the plants in poor soil, so that they might be in a somewhat starved condition. Mr. Cannell remarked that the usefulness of the early Chrysanthemums was not fully recognised yet, and he thought considerable progress would be made in increasing their diversity. He also thought Conferences of this nature afforded an admirable way of bringing together those specially interested in a particular subject, who by discussion could throw light on many difficult points. Several others took part in the discussion, and the Chairman then called upon Mr. J. Doughty, Angley Park Gardens, to read his paper on "The treatment of plants grown for the production of fine blooms a short time previous to the exhibition season." This was followed by some discussion, and

the meeting closed with the usual votes of thanks to the readers of the papers and the chairman.

EARLY-FLOWERING CHRYSANTHEMUMS.

[By W. Piercy, Forest Hill, S.E. Read at the National Chrysanthemum Society's Conference, September 11th, 1889.]

FOR some years before 1876 I was growing Chrysanthemums in the open garden, and I found that very generally just as they were coming into bloom the frost came and spoilt the flowers, often in a single night. I observed that one plant bloomed in October. This was the old sort *Drin Drin*, which set me thinking if it was not possible to have a race of early sorts. I found that very little was known of varieties blooming before November, but in the *Gardeners' Magazine* of November 11th, 1876, a letter appeared from the Rev. F. Freeman, now of Wickersley Rectory, Rotherham, Yorkshire, from which it was evident that he was on the same track as myself. In the issue of the same paper for December 2nd, 1876, there was a communication from the late Henry Taylor, giving a list of thirteen sorts blooming before the end of October. These two communications made me sure that it was possible in England to have Chrysanthemums in bloom in the open before the frost came, and the hunt began. I soon found that Mr. Watson, then of the Marlborough Nursery, Islington, London, grew these plants in large quantities in small pots for trade purposes, but that he had few if any sorts beyond those in Mr. H. Taylor's list, which did not include *Nanum* (the *Sistou* of the French). This came to me in 1877 from the Pine Apple Nursery in the Edgware Road, London, with the name *Nanum*. In 1877, also, I procured *Madame Picol*, or *Piccol*, sometimes spelt *Pecoul*, I do not know which is right. I mention these, not because they were the only varieties, but that they are still two of the best in their respective lines of colour. *Madame Piccol* has since produced a red sport, which is called *Mr. Piercy*, because it first sported at my place. I do not know who raised either of them, but that they came from France there can be little doubt. Some were probably known and grown as early as 1817, for the London Horticultural Society offered a medal for early-flowering Chrysanthemums in that year, but I do not know with what results. Mr. Broome's little book, published in 1858, mentions thirteen sorts. Among these were *Scarlet Gem*, since called *Little Bob*, its proper name being *Dr. Bois Duval*, and *Frédéric Pelé*, which seems to have preserved its French name all through until now. These two are still grown, and *F. Pelé* is even now the best in its line for many purposes, but *Dr. Bois Duval*, although a fine colour and doing well in some places, is a very weak plant and difficult to keep in winter. Mr. Salter, in his book published in 1865, gives a list of fifteen sorts, but I do not know whether *Illustration* was in either of those lists. This was one of the best old sorts, being hardy, robust, of good habit, dwarf, and free-flowering. It has had many names and several sports, and for a considerable time was the principal variety grown. Its proper name is *Marie Longarre*, as I imported it from France so-called. It is still grown by some and is good for rough culture and common flowers. The first I know about it is that it was procured by Mr. Watson of Islington from a churchyard at the West End of London in 1869, and it was the first sort he had. *Précocité* is another old sort still grown for large quantities of cheap yellow cut flowers, and holds its position because it is robust in the open ground, and owing to a slight incurve of the flowers packs and stands carriage well in large bunches. I knew nothing of this before 1877. A few years previous to this most people seemed to know nothing about early-flowering Chrysanthemums; others said they were quite common, but some of the latter were such that if you were to show them a bit of the North Pole would say they had seen plenty of that before.

Early in 1878 the late Mr. Helman of Croutes, Guernsey, sent me some cuttings without name, which he did not know, and could not find out, so I named it after that place, *Saint Croutes*. It turned out to be identical with the one found by the Rev. F. Freeman at Saddington Rectory, Leicestershire, hence called by him *Saddington*, but found afterwards by importation from France to be *Pollion*. It is still the best in its line, not in its original colour, pink, but white, to which it sported a few years after at Tooting, Surrey.

It must ever be borne in mind that the qualities desirable, and stamping many of these sorts as good and best, are quite different from those of the late sorts and those to win prizes at shows, with the exception of such as *Madame C. Desgrange* and *Léoni Lassali*. They are not fit for the long stick with a flower or two at the top sort of plant, or those monstrosities which look like a kind of illustrated *loo table*, both of which shapes no Chrysanthemum, either early or late, ever grow in naturally.

The most striking point to advance in general estimation these early sorts, and to silence objectors and stir up indifference, was the discovery in the summer of 1879 of *Madame Castex Desgrange* by Mr. Robert Parker, at that time of the Exotic Nursery, Tooting, Surrey. This was found by him in a lady's garden in Wales. On March 15th, 1880, he gave me two little plants of it, and from those two little plants and his stock the bulk of those now in cultivation have come. As is customary, as soon as this variety became known we had the cry common in such cases that it was known before. Old French catalogues were found in which there was the name, but no one had seen the plant. Others said they had it, but I did not find they had the stock. It was in the lists of M. Lemoine and M. Crousse of Nancy, France, of March, 1881, but I expect they had it from England the year before, or raked it up from some place in France, for we had heard nothing of it from them before March, 1881. Lemoine says it was raised by Bou-

charlat. Crousse spells it *Desgranges*. However, it was then, and is now, the very best early Japanese, either in its white and yellow colour, and its primrose sport called *Mrs. Burrell*. It was a curious thing that the very next summer that we heard of the first yellow sport of *Madame C. Desgrange* I found it had sported in six places the same colour. This is one of the curious aspects of sports that after a plant has been grown a number of years from the seed, it sometimes the same year or year after sports in a second or more places, just in the same way that we have three sports of *Mdlle. Lacroix* in three places in 1888; other sorts never sport at all, as in the case of *Nanum*, although it is now old. I have known it since 1877, and it has been grown in all sorts of places and in large quantities for cut flowers, never varying in the least, but being neither better nor worse than the first year grown.

At the end of 1881 we received from M. Lemoine, of Nancy, France, *Lyon*, which is one of the best Pompons of the early kinds we have ever had or have. Its faults are its delicacy in winter and sparseness of cuttings, but in all other respects it is first-class. I have counted 434 florets in a bloom. It is now to a great extent superseded by its red sport, *Alice Butcher*, which is in every respect the same except colour, and reds are much more scarce, also much more liked by the ladies, who are great factors in the cut flower trade; besides, the original colour much resembles *Blushing Bride*. At the end of 1881, too, we received also from M. Lemoine, *Mdlle. Jolivart*. This is still one of the most beautiful and useful Pompons we have. I have not found anything to surpass it in all its good qualities. It has never sported, being white as at first. It was in 1881 that we also received for the first time *La Vierge*, a white October bloomer. I denominate all that bloom up to the end of September early, and those that bloom in October semi-early, which terms are about equal to the French *Précoce* and *Hâtive*.

In 1883 we first discovered the merits of a new sort imported from France by Mr. Ware, of the Hale Farm Nurseries, Tottenham, London. It was called *Late Flora*, but why it was so designated we know not, for it is very early, and the best yellow Pompon in its line. It is a reflexed yellow flower, and blooms for months together, commencing in August. We have dropped the *Late*, and now call it *Flora*, but there are two more *Floras*, late ones.

It was not till 1885 that we found the one we named *Blushing Bride*. It was among a lot of wrongly named old sorts and rubbish imported from France by Mr. Davis, of the Lilford Road, Camberwell, London, and is believed to have been raised by some amateur. This is still the very best in its line, and will bloom twice in one season. In 1886 Mr. T. S. Ware imported from M. Pertuzes, of Toulouse, the raiser, *Leoni Lassali*, which was of an entirely new type among the early sorts, being a large ivory-white flower of a semi-incurved character. It is very beautiful in many respects, not so profuse a bloomer as some, but that is made up for by the beauty and size of the flowers. It blooms in August, and stands alone, being a large-flowered sort, not Japanese.

Grace Attick is the last grand new sort entirely distinct that we have received. I believe it was raised in New York by Mr. John Thorpe, and imported by Mr. Cannell, of Swanley, Kent, in 1887. It is a quite new type of Japanese, a white large flower on a dwarf plant. The very earliest of all Chrysanthemums blooming a month earlier than *Nanum*, and coming out at the very beginning of May, under glass, of course. I believe that this plant will be largely grown, and should we be able to seed it in England, or in some other climate, it will probably be the origin of an entirely new branch of the early blooming sorts. It is very dwarf and bushy, a good grower in summer, but weak and very liable to mould off in propagating in spring, with a disposition to bloom itself to death in summer.

The great uses of these plants are to decorate gardens in the open, even in the north of Britain, where the late kinds would be destroyed by the frost, and to fill the gap in the season between the summer flowers and the November Chrysanthemums. Their dwarf and bushy habit fits them very much for pot plants for decoration and sale as such, while their capacity to supply cut flowers is unbounded. Considering the labour and expense, as well as their durability in a cut state in water, they are perhaps the cheapest and most effective flowers grown. Besides, there is one great point more in their favour, they will grow and flourish in the smoky and dirty air of towns and suburbs, where few plants will flourish, and where no *Rose* will live and bloom.

As to the progress in future the aspects are most promising. Years ago I began to grow seedlings. My first grew very well, and when flowering time came they were still growing into plants of vast size, but no sign of bloom appeared. I then heard, "Oh, they do not bloom the first season." So I saved them till the next year, when their size was magnificent; but the bloom, when it came, was such that we threw them all away at once. Subsequent seedlings were no better. These were all from foreign trade seed. I then began to look around, and on the railway slopes at the back of my ground saw the wild English Chrysanthemum *leucanthemum*, the *Ox-eye* or *Dog Daisy*, in bloom in May; so I thought to double that, but it was no good—all the seedlings came exactly like the parent, in every way so very different in that respect from the seedlings of the other Chrysanthemums, which I then attributed to the foreign seed being from mixed plants. I could get 10 seed from the really early sorts till Mr. John Thorpe sent me a small packet of early seed from New York in 1885, from which I raised over 100 plants, among which there was only one really good early variety, which I named *Piercy's Seedling*. This was my first real success in raising new kinds, for it is really good; but I wished to raise my own seed, so that I should know what I was doing. I tried in vain. I sent plants to Mr. Laxton, the seed grower of Bedford, on hot sandy soil

and to Mr. Elliott of Jersey, with no better results. The seeds, under a strong glass, were seen to be infertile. I then proposed to send the early sorts to the south of France and Algeria, and the Rev. F. Freeman sent some to Ohio, U.S.A. In the meantime I was on the look out for some early single sort. This, through the craze for single flowers, I procured by the kindness of Mr. W. H. Cullingford, who grew a lot of seedlings from seed he had from Mr. Hartland of Cork, Ireland, and named Hartland's Marguerite. It was a great, tall, profuse blooming, nearly single, white Pompon, and I had plenty of seed from it the first season. From this seed the next year I selected two dwarf plants of the best character, and from the seed of these I have now some real beauties. I still have one of these, which I call Seedbearer, which even in last year's bad season perfected good seed.

When I first grew the seed of Hartland's Marguerite it was with immense surprise I saw that instead of the plants being all alike they were nearly all different from the parent, though there was a family likeness in some of them. Last season I again grew the seed of these two selected plants separate, and have as their descendants Goldsmith, a fine early yellow Pompon, which will bloom twice in one season; Clara, good early white Pompon; Miss P. Broughton, late white Pompon; White Lady, lovely early white Pompon; Dod's pretty little yellow dwarf Pompon, and others. Besides these, the year before last I had good seed from Salter's Early Blush, from which I have raised an advance on it I have named Jacintha. We have also from the seed of these two seedlings, among the plants grown at Mr. Ware's nursery last season, a very beautiful dwarf white Pompon named Duchess of Fife; it is about a foot high, and was in bloom August 12th. The flowers resemble Mdle. Marthe. It is entirely different from all others. We had also from this same lot of seedlings grown at Mr. Ware's the most beautiful early yellow Pompon in cultivation. We have named this Golden Shah. The colour is the very finest deep yellow, very bright; the flowers are 2½ inches across, deep, full, and reflexed. The plant grows 2 feet high, with slender but strong habit; the foliage very spare indeed, and each flower has a good long stalk, so that every bloom can come out, which renders it very good for cutting purposes, besides giving the plant a very elegant appearance. It is a very rapid grower. Thus two plants raised from cuttings in March 24th were in full bloom by July 25th, and two more struck on May 24th were in full bloom July 29th. It stands rain wonderfully well for so delicate a flower, and it is certainly the very finest early English seedling up to this time, as well as being the best early Pompon, English or foreign. It is remarkable also as being raised from seed saved at Forest Hill, and only two generations from the poor white Hartland's Marguerite, which was nearly single. All this is not only good as regards Chrysanthemums, but very wonderful as an illustration of vegetable physiology. I regard it as a revelation in itself worth having, apart from the gain of such a plant.

The greatest and earliest friends and helpers in what I may call the modern history of these sorts, which began in England about 1868, are Mr. Shirley Hibberd; Mr. Watson, sen., now of Bowes Park, Wood Green, Middlesex; Mr. N. Davis of Camberwell; Mr. W. H. Head of the Crystal Palace; and the Rev. F. Freeman. I have to thank all these gentlemen and many others for their friendly help, and also the members of the horticultural press, not forgetting Mr. Libby of New York.

We now want a few more enthusiastic amateurs, and any spare money we can get, for these are the things to help on the progress of these early varieties, which appear capable of boundless extension.

[By Mr. T. Turton, Maiden Eridge Gardens, Reading. Read at the Chrysanthemum Conference, St. Stephens' Hall, Westminster, September 11th, 1889.]

HAVING been successful now for several seasons past in obtaining a good display outdoors with the early Chrysanthemum, and complying with a request from Mr. A. Dean, I send a few notes respecting our method of growing them. This, however, is so simple that a very few words will suffice to explain it.

First, as to raising the plants, let me say it is solely to the generous treatment given the cuttings that I attribute our success. But here I must explain that we force a great quantity of Asparagus through the spring in frames on hotbeds. It is there we raise our plants, by dibbling in the cuttings early in February among the Asparagus. The moist atmosphere from the dung keeps the cuttings fresh until they emit roots, which does not take more than a fortnight. They are then placed into small sixty sized pots, and returned to the frame. There they quickly take to the new soil, and are soon growing apace. We stop the plants once only, which is done at this stage, and as soon as they have started they are hardened, and in due time are shifted into forty-eight sized pots. In these they make strong plants, and are placed out in the first favourable weather we have in May.

Respecting the names of the varieties we grow, I should like to class them in three sections.

Section I. comprises those which are in flower with us from the beginning of July. They are Mr. W. Piercy, colour brick-red; Précoceité, yellow; St. Mary, white; Madame Jolivet, blush-white; Nanum, creamy-white; Madeline Davis, yellow; St. Croutes, pink; and White Croutes, white. Anastasio, a light purple, we have had good only once or twice, and as it is not flowering at all this season it will now be discarded.

Section II. includes Madame C. Desgranges and its sport G. Wermig. These two varieties are the most useful of all. They are in flower from the beginning of August until cut down by frost. It has long been my

wish to see varieties introduced into this section of bright colour, and possessing the good qualities of the Desgranges type, when, I think, it would be difficult to imagine anything more beautiful through the months of August and September than a wide border, the front planted with varieties of this section, backed with Dahlias of the Cactus and single flowering varieties.

Section III. contains La Vierge, pure white; Lyon (hybrid Pompon), bright rosy purple; Inimitable (Pompon), amber; Pomponium (Pompon), light orange, Alexander Dufour (Jap.), bright purple; and Roi de Précoces (Jap.), bright crimson, a splendid variety. These flower through October.

I would add, as explanatory of my growing these early blooming Chrysanthemums in such considerable quantities, that having to supply flowers largely during the fishing and grouse-shooting season in the summer and autumn in Scotland, I find none to travel a long journey so well as do the Chrysanthemums. Flowers cut here at midday and despatched per rail at 2 P.M. from Earley, reach their destination in Scotland during the following afternoon, a period of some twenty-six hours, often during warm weather: yet do the Chrysanthemums invariably arrive fresh and beautiful. That capacity to endure long journeys packed I attribute to their being well-matured by outdoor exposure and the hardness of the stems, whilst those of more tender flowers being more sappy wither the sooner. To be able to send flowers fresh and sweet so long a journey is, in these days, a matter for congratulation, and shows how much gardeners owe to the introduction of the early blooming Chrysanthemum.

DEVIZES CHRYSANTHEMUM SHOW.

THIS will take place this year on Tuesday, Nov. 12th; unfortunately, in some respects, on the same day as the great Show of the National Chrysanthemum Society at the Royal Aquarium. Some excellent plants and cut flowers are always seen at Devizes, and the townspeople support the Exhibition by attending in large numbers. The Show forms a part of the programme of the Devizes Benevolent Society, which holds a Flower Show and Bazaar in aid of its funds in combination. The amount realised by the Bazaar and Flower Show is expended by the benevolent district visitors in various ways for the benefit of the deserving poor. Prizes are also offered for Primulas in pots, and some of the best specimens we have ever seen are grown in the neighbourhood. The manager and superintendent of the Show is Mr. Thomas King, Castle Gardens, Devizes.

"SETTING" VERSUS "TAKING THE BUD."

I QUITE agree with Mr. Baker, page 183, that the term "taking the bud" is a misleading one. I remember some years ago having a rather disagreeable demonstration of this fact. After, as I thought, duly explaining the method to one of my assistants, I sent him to take all that were forward enough. Fortunately, however, I visited him soon after, for I found he was really "taking" the buds. Yes, he was carefully nipping out the flower buds, and leaving the wood buds. He was sure I told him to "take the buds," and how could I call leaving them on the plants "taking them?" This may be considered an extreme case, but it sufficiently shows the importance of using positive instead of negative terms. A tyro, on being told to take the buds, would not think of leaving them on the plants unless especial instruction was given him to that effect. Almost all that I have explained the method of "taking the bud" to for the first time, have declared the practice directly contrary to their preconceived notions of it.

The term "setting the bud," as suggested by Mr. Baker, would be far more descriptive of the actual practice, and would be readily understood by the younger members of the craft.—J. H. W.

NOTES AT READING.

TRAVELLERS to or through Reading by the Great Western line have probably observed the broad stretches of flowers on the lefthand side just before the town is entered. They present a bright picture of floral beauty on a cheerful autumn day, and remind the visitor that the pleasant Berkshire town which has been for so many years famed for its biscuit-manufacturing industry can boast another of hardly less magnitude—that of the culture and distribution of garden and farm seeds. Messrs. Suttons' great establishment there is a world-famed one, and the huge blocks of buildings bearing their name are conspicuous even in close proximity to the extensive and lofty manufactories of the biscuit trade. There is little time to take note of them before the station is reached, but those who think well to spend an hour or two in inspecting what Messrs. Sutton have to show them will be well advised. The great seed establishment is easily found, and courteous attention is paid to any visitor interested in horticulture who may call. Gardeners generally will perhaps not find it of special interest to wander over every floor of the huge warehouses, but at the trial and seed-saving grounds, to which they will be directed on inquiry, they will find abundant material for admiration and reflection. The grounds are situated in London Road, Reading. The outdoor portion is devoted to special trials of various crops, the glass—of which there are extensive ranges—to the culture for seed of the choice florists' flowers for which the firm is so much noted. It may be said at once that no department of the enormous seed business reflects higher credit on the firm than this. Begonias, Primulas, Cyclamens, and other flowers are grown in surprising numbers, and the strains—the work of many years' careful selection

and hybridisation—are of the highest merit. The plants are splendidly cultivated. Nowhere in the kingdom can the flowers named and numerous others be found in finer condition. One or two present features of the nursery are referred to.

BEGONIAS.

What Begonias were ten or fifteen years ago most gardeners know well, but there have been great changes. The Begonia of that date was a loose straggling plant, not too well furnished with bloom, and with a limited range of colour. What it is now a visit to any of the shows where one of the great growers is exhibiting strongly will explain far more eloquently than words. Messrs. Sutton have had a large share in the work of improvement, and their strain embraces all the points required in a first class Begonia—namely, dwarf, compact habit, free blooming, and large flowers of clear, decided, and well varied colours. The Begonia houses at Reading are a most striking sight just now. The plants, it should be borne in mind, are cultivated for seed, and they are grown in large blocks of distinct colours. For instance, there are scarlet, white, rose, crimson, blush, and yellow, all exhibiting the same qualities of large flowers, full of colour, free blooming, and good habit. Those who have purchased Begonia seed by the packet, and received a quantity which a breath would dissipate, will be able to realise the demand for seed when it is said that many ounces are saved and distributed yearly. The plants now flowering are not much more than six months old, the seed having been sown in February. It is curious to note how the Pearcei blood shows itself amongst them. That useful old Begonia was the parent of the beautiful varieties seen to-day. In some flowers the rich colouring is so intensely concentrated that it has suffused the stigma, as though unable to find development in the petals. Here is a singular fact. A cross was effected between *B. semperflorens gigantea carminea rosea* and *B. metallica*, and the result of the union of these two fibrous-rooted varieties has been the production in one year of a tuberous-rooted form.

CYCLAMENS AND PRIMULAS.

It would not be easy to derive more pleasure from a batch of plants out of bloom than is gained by inspecting Messrs. Sutton's Cyclamens, which are now in free growth. There are thousands of plants growing in such vigorous health that one could imagine this one of the easiest plants to cultivate; but Cyclamens have their peculiarities, which bring many persons to grief. Undoubtedly one common cause of failure, or of only partial success, is the necessity for growing the plants in a mixed house. They have likes and dislikes of their own, especially regarding moisture, which cannot be so carefully studied when other plants are grown in association with them as when they are cultivated alone, and unfortunately the difficulty is usually unavoidable. There are three well marked periods in the development of these beautiful plants. First there is that of root formation, secondly that of leaf growth, thirdly that of blooming. As the flowering period lasts several months no one will question the importance of building up a thoroughly vigorous and healthy plant to support it. Free healthy root action, followed by a steady unchecked development of sturdy leaf growth, are the forerunners of abundant blooming. Messrs. Sutton secure them all by a course of treatment based on long and careful study of the requirements and peculiarities of the plants. At the present time they are in the perfection of health and strength, well clothed with stout foliage, having a spread in one batch of nearly a foot, and with abundance of bloom buds clustering at the base. They are saturated with moisture, and revel in it at this period of the year, and the atmosphere of the house is of that genial, pleasant humidity so agreeable both to men and plants. The seed was sown in November. Primulas are making healthy growth in pits. Nothing could look more thriving and comfortable than they.

GESNERA ZEBRINA DISCOLOR.

This useful plant well deserves a note. It is valuable from its blooming in late autumn. Plants at Reading are just coming into flower, but will not be at their best for some time yet. The attractiveness of the plant consists in its large, handsome, velvety, heart-shaped leaves as much as in the flowers, pleasing though the latter are. They are borne well above the foliage, and are vermilion or bright scarlet in colour, the throat dotted with white. This *Gesnera* is of easy culture. It may be readily raised from seed. Messrs. Sutton sow in February, and the plants come into bloom the following year. They are growing in 6-inch pots, and such handsome specimens are of much value for decoration in the dull season.

CLIANTHUS DAMPIERI.

I refer to this plant to note a curious instance of its capricious character. Some seeds were sown in heat in February, and the plants put out on a sunny border in May. Though the plant had repeatedly caused disappointment before, it now grew vigorously and rapidly, one developing into a grand specimen a yard or more through, well furnished with flower spikes. With a large number of its rich red flowers, conspicuously centred with black, open at once, it was an undeniably fine and striking object. But more curious still, a little seed was sown out of doors on the same border in May; the plants grew freely, and are now blooming profusely, although they have not, of course, attained anything like the dimensions of the fine specimen referred to. Many have failed to grow and flower this plant well after devoting the utmost care to it. Here is an example of what it will do when practically left

to itself. It is probable that the extremely hot and dry weather in early summer suited it.

It is not possible in a few hasty notes taken when other work was waiting to be done to exhaust the features of interest in Messrs. Sutton's admirably managed seed grounds; but it may be added that another extensive trial of Tomatoes is being conducted, and the quarter devoted to them is a marvellous sight. The plants are grown about 9 inches apart, and trained to strong stakes $3\frac{1}{2}$ feet high. The fruit commenced colouring on August 7th, and the plants are now loaded with ripe and ripening fruit. Among a large number of varieties Earliest of All and Perfection are conspicuously excellent. There is also a trial of Melons, and if a better variety than Hero of Lockinge is found there will be something to be proud of. About an acre of Asters are being grown in separate blocks of some hundred plants each, producing a very fine and diversified effect. They range from 6 inches to $1\frac{1}{2}$ foot in height. The seed was sown out of doors at the end of April. Phloxes and many other attractive flowers are also largely grown, indeed both indoors and out this seed-saving establishment is full of interest and beauty.—W. P. W.



EVENTS OF THE WEEK.—The Manchester Royal Botanical and Horticultural Society will hold an Exhibition of fruit and flowers on Friday and Saturday, September 20th and 21st. The Royal Horticultural Society's Vegetable Conference will be held in the gardens at Chiswick on Tuesday, Wednesday, and Thursday, September 24th, 25th, and 26th, the Fruit and Floral Committees meeting on the first day at 11 A.M. A gardeners' dinner will be held at the Cannon Street Hotel on the evening of September 24th, at 6 P.M., Mr. H. J. Veitch in the chair. Tickets can be had from Mr. A. F. Barron.

— **THE WEATHER.**—A period of clear bright weather has rendered the past week most agreeable, but it has led to what many expected—an early frost, which, on the morning of Tuesday last blackened the Dahlias in numerous gardens. Mr. E. Mawley recorded 6° on the grass at Berkhamstead, and this would almost seem to corroborate one statement that 9° had been registered at Slough, though that appeared incredibly severe. Mr. John Doughty, The Gardens, Angley Park, Cranbrook, Kent, writes:—"We had a very severe frost on September 17th; ice thicker than a penny was found in the greenhouse gutter. Chrysanthemum leaves were frozen to each other; they were syringed, and thin pieces of paper laid over the buds until thawed, but I fear it has done them great damage." Mr. T. Laxton also writes from Bedford, "A sharp frost here last night (September 16th), the first of the season. Cucumbers much cut, Marrows slightly; Dahlias, Runner Beans, and Tomatoes do not appear to have suffered." In the neighbourhood of London Vegetable Marrows, Beans, Tomatoes, and Dahlias have been injured or destroyed in many gardens.

— **NATIONAL VEGETABLE CONFERENCE AND EXHIBITION, CHISWICK, SEPTEMBER 24TH, 25TH, AND 26TH.**—This promises to be a specially interesting meeting, entries of exhibits having been received from all parts of the country. Scotland and Wales will be well represented. We also learn that M. Vilmorin of Paris will be present with a large number of exhibits, and consignments from America are also expected. We may remind our readers that the entries close on the 21st, and that those who have not given notice should do so at once.

— **WE** are desired to state that the **COLLECTION OF ORCHIDS** formed by the late Hon. and Rev. J. T. Boscawen, at Lamorran, Cornwall, will be sold by auction on the premises on October 3rd.

— **RATS IN GARDENS.**—"L. K." would be very glad to know if there is any way of getting rid of rats that infest a garden, and are to be seen in broad daylight eating the Peas, &c. Poison has been tried, phosphoric paste, and other things. Though the poison disappears, the rats are just as numerous. They will not go into any traps.

— **THE Kew Bulletin** for September contains articles on "The Flowers of *Calligonum polygonoides* as an Article of Food in N.W. India." Coca, Buaze fibre (*Securidaca longipedunculata*), vegetable productions from Central China, Vine cultivation in the Gironde, and *Phylloloxera* in South Africa are also treated upon in several letters and notes.

— **EARLY ASCOT PEACH.**—A correspondent, "R. R." asks if any of our readers who have grown this Peach will oblige by stating their experience of its cropping qualities and the flavour of the fruit.

— WE are informed that MESSRS. KELWAY & SON, LANGPORT, provided a display of cut Gladioli, Pyrethrums, Gaillardias, Dahlias, and Globe Quilled Asters at the Paris Exhibition from September 6th to 11th, and the Jury awarded them a premier prize in addition to the awards granted earlier in the season.

— I SAW in a recent issue of the Journal, page 229, an interesting paragraph on Yuccas. We have one plant here of *YUCCA ALOIFOLIA VARIEGATA*, 8 feet high, which is in bloom, though past its best. The spike of flowers is a little over 2 feet high, and colour similar to the one your correspondent describes at Hamilton Palace. It is a noble plant, and splendid spike of flowers. It has been a great source of attraction to the visitors to the park, thousands coming to see it. Do any of your readers know of one of this variety that is in flower in England?—MICHAEL LANDER, *Manager, Horton Park, Bradford, Yorkshire.*

— THE following is the award of the arbitrators appointed in the case of HAWKINS & BENNETT v. WARE, which was fully summarised on page 215:—"We do award and certify that the plaintiffs' and defendant's Chrysanthemums, the subject of this action, are identical. That the plaintiffs are not entitled to any damages for the user of the name, title, or description 'Mrs. Hawkins' as applied to a Chrysanthemum plant, for which the plaintiffs were awarded two first-class certificates of merit in September, 1888, and we award that the plaintiffs pay the whole of the cost of the action up to the date of the Order of Reference, the 22nd day of August, 1889; and we further award that the whole of the costs of the arbitration and award be borne in equal moieties by the said plaintiffs and defendant respectively."

— "GARDEN ALLOTMENTS; THEIR ADVANTAGES AND UTILISATION."—Mr. J. Wright's lecture on the above subject, delivered at Nottingham, and which subsequently appeared in this Journal, is, in response to requests from clergymen, land proprietors, and gardeners, old and young, issued in the form of a neat pamphlet of thirty-two pages. We quote from the preface:—"In order that the greatest number to whom it may be suggestive can obtain a copy, it is circulated at a low price—3d., by post 3½d. Private gentlemen, clergymen, and others who desire copies for distribution will be supplied in parcels of fifty and upwards at the rate of £1 per 100, carriage free. Co-operation is requested with the object of improving cottage garden and small allotment cultivation in various parts of the country." It is published at the office of this Journal.

— **SHOW OF ASTERS AND MARIGOLDS AT KELSO.**—Encouraged by the general success which has attended their former competitions, Messrs. Stuart & Mein, the enterprising firm of nurserymen and seedsmen at Kelso, offered some time ago four prizes each for Marigolds and Asters to be grown from seed supplied directly from them, and accordingly a Show took place within the premises in Wood Market occupied by the firm on Friday last. No fewer than 840 blooms were staged, and the competition represented a very wide area, the following being a few of the counties from which blooms were sent:—Forfarshire and Aberdeenshire in Scotland; Staffordshire, Shropshire, Wiltshire, Buckinghamshire, Warwickshire, and Cornwall in England; and also from a few of the counties of Ireland. In point of quality the Show was exceedingly fine, and in the course of the afternoon it was largely patronised, the arrangements being similar to those at former competitions.—(*Kelso Chronicle.*)

— ONE of the most tasteful and effective RIBBON BORDERS we have seen this season is in Mrs. Treadwell's garden, Leigham Court, Streatham Hill. It is on the lefthand side of the carriage drive leading from the main road to the house, and is about 2 feet in width. The groundwork is a dense dark green carpet of *Herniaria glabra* margined on the side next to the drive by a neatly clipped low hedge of *Euonymus radicans variegata*, upon the other side by *Kleinia repens*. Upon the *Herniaria* at short intervals are elliptical panels of *Alternanthera amoena* and *A. paronychioides aurea* alternately, both being capitally coloured, and between these are plants of *Chamaepeuce diacantha* and *easa-bonae*, with a few taller plants of *Pachyphyton*. It is unpretentious yet very effective and excellent in all respects. The garden generally at Leigham Court is a model of good keeping, and shows the skill and care of the gardener, Mr. E. Butts, in every department.

— **FRUIT GROWING IN ENGLAND.**—During the past few months the Fruiterers' Company have received several valuable suggestions as to the encouragement of fruit culture in England from the Lord Mayor, Mr. Henry Chaplin, M.P., the President of the Board of Agriculture, and many other gentlemen, have passed the following resolution:—Resolved, that the Fruiterers' Company feel strongly the great importance of the question of fruit farming in England, and view with much concern the want of attention paid to the production of Apples, Pears, Plums, and other hardy fruits of fine quality, and deplore the frequently neglected state of many of the existing orchards. The Committee therefore desire to encourage the development of the profitable culture of fruits of high quality in England for the advantage of the grower and consumer, and for the better utilisation of agricultural land. With this object the Company propose to establish a fund of not less than £5000 (towards which they are willing to contribute £500), from the income whereof they intend annually to offer prizes for the best managed fruit farms, plantations, or orchards. The Lord Mayor has undertaken to receive at the Mansion House subscriptions to the fund, and they can also be sent to the Clerk of the Company, Mr. O. C. T. Eagleton, 40, Chancery Lane, London.

— **NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.**—The monthly meeting of the Notts Horticultural and Botanical Society was held on Wednesday evening, September 11th, at the Arboretum Rooms and was well attended. There was a good show of plants, cut flowers, fruits, and Ferns, a speciality being the exhibition of *Gladiolus* blooms, of which several new specimens were shown. Plants, flowers, and vegetables were sent for exhibition by Mr. J. Robinson (gardener, Mr. J. Plumb), Mr. W. H. Farmer (gardener, W. Attenborough), Mr. C. J. Cox (gardener, J. Meadows), Mr. J. Fearfield (gardener, J. Underwood), Mr. T. Hallam (gardener, W. Newton), Messrs. J. R. Pearson and Sons, Chilwell; Mr. E. Massey (gardener, W. Bateman), Mr. T. B. Hallam, Corporation Road; Messrs. James Booth, J. Baker (Basford), and J. W. Turner. The exhibits were of a choice description, and amongst them were splendid specimens of hothouse Grapes and Tomatoes. The feature of the evening, however, was Mr. A. H. Pearson's paper on "A Visit to the Bulb Farms of Holland." Mr. Pearson, who is a member of the well-known firm of Messrs. J. R. Pearson and Sons of Chilwell, has recently paid a visit to the Netherlands—as he says the country is properly called—and has given his friends, who are interested in horticulture, the benefit of his impressions on bulb growing in Holland. We have been obliged with the paper referred to, and it will be published in an early issue of this Journal.

DOGMERSFIELD PARK, WINCHFIELD.

THE owner of the beautiful gardens and grounds of Dogmersfield Park, Sir Henry St. John Mildmay, Bart., is generous enough to throw them open to the public two days in each year, a privilege which is much appreciated in the neighbourhood. On the 2nd of this month, I, in company with many others, wended my way thither in response to one of these annual invitations, and it occurred to me that a few notes taken on the spot might prove interesting to your numerous readers. We entered by what are called the "golden gates." These are massive ornamental iron gates, with the shield and arms of the family in burnished brass, and they open on the

FLOWER GARDEN.

Vases containing choice specimens of Ivy-leaf *Pelargoniums*, *Fuchsias*, &c., stand on each side of the gates and at approximate angles all over the gardens. Inside the gates, on each side of the walk a plateau of Ivy with its rich green leaves forms a good background to what is one of the chief attractions to all visitors. The carpet bedding is a feature here. The beds were arranged in pairs crosswise, say a pair of oblong beds filled in with Zonal *Pelargoniums*—the crimson would be opposite the scarlet, and *vice versa*, thus avoiding formality and giving a pleasing distribution of colour. A large number of oblong and round beds filled in with every conceivable mathematical design worked out in flowers or foliage plants showed exquisite care and skill in the exactness of outline, arrangement and blending of colours, and extreme neatness combined with endless variety. Mr. G. Trinder is the head gardener, and what struck me year by year is the way in which he uses the simplest plants he has at hand to produce the most marked results. All the circular beds were raised a foot from the ground, with bevelled edges of *Herniaria glabra*, and this avoided the look of flatness that we often see in carpet bedding, and which is an objection.

Here are a few specimens of the plants used in some of them. Two round beds. No. 1.—Central plant a variegated Yew, surrounded with *Abutilon vexillarium variegatum*; panels, *Oxalis tropaeolioides*; marginal lines, *Leucophytum Browni* and variegated Thyme; groundwork, *Herniaria glabra*. Round beds, No. 2.—Centre, *Alternanthera versicolor*; panels, *Mesembryanthemum cordifolium variegatum*; marginal lines, *Leucophytum Browni*; groundwork, *Sedum acre elegans*. Round beds,

No. 3.—Centre, *Alternanthera paronychioides* major; panels, *Alternanthera amena*; marginal lines, *Spergula pilifera* aurea; groundwork, *Antennaria tomentosa*. Round beds, No. 4.—Centre plant of *Grevillea robusta*, surrounded with *Iresine Herbsti*, *Iresine Lindenii*, and *Iresine Wallsi* in circles; panels, *Iresine Lindenii* and *Alternanthera paronychioides* major; marginal lines, variegated Thyme; groundwork, *Sedum aere elegans*. Round beds, No. 5.—Centre, *Alternanthera versicolor* and *amena*; panels, *Alternanthera magnifica*; marginal lines, *Leucophytum Brownii*; groundwork, green *Spergula pilifera*.

Several oblong beds showed also pretty designs, and those filled with Zonal Pelargoniums Mrs. John Gibbons and Henry Jacoby were very brilliant in colour, to which their borders of *Ageratum Perle Bleu* gave a pretty relief. I observed that the several designs were much studied and commented on by the visitors, even the children evincing great interest. In these days of "schools of art" gardeners must look well to their laurels in this department. A diamond inside a square for the centre of a circular bed was much remarked. Four large statuary vases of the *Fuchsia Charming* presented a mass of bright blossom that

the graceful branches of a Tree Fern or Palm distributed here and there among the flowers.

The fernery comes next, and its walls are covered with a variety of Ferns on a groundwork of *Selaginella Kraussiana*, and it contains some very fine pots of various Maidenhair Ferns, such as *Adiantum formosum*, *Pacotti*, and *gracillimum*. Outside I noticed some large beds of Marie Louise Violets, from which the gardener told me he had been cutting the last six or seven weeks, and still there were plenty.

The border walk is made up on each side with *Heliotrope Duchess of Edinburgh*, Zonal Pelargoniums Titian and Master Christine scalloped out with the Ivy-leaf Madame Crousse and *Sedum spectabile*. In the walk leading from the gardener's house to the kitchen gardens are some pretty lozenge beds alternated in variety with gold and silver *Retinospora*, and these show up well from a groundwork of *Herniaria glabra* used instead of grass. Here we see again those wonderfully cut walls of Holy and Yew that excite the admiration of all visitors to Dogmersfield.

In other borders may be seen in profusion all the ordinary border

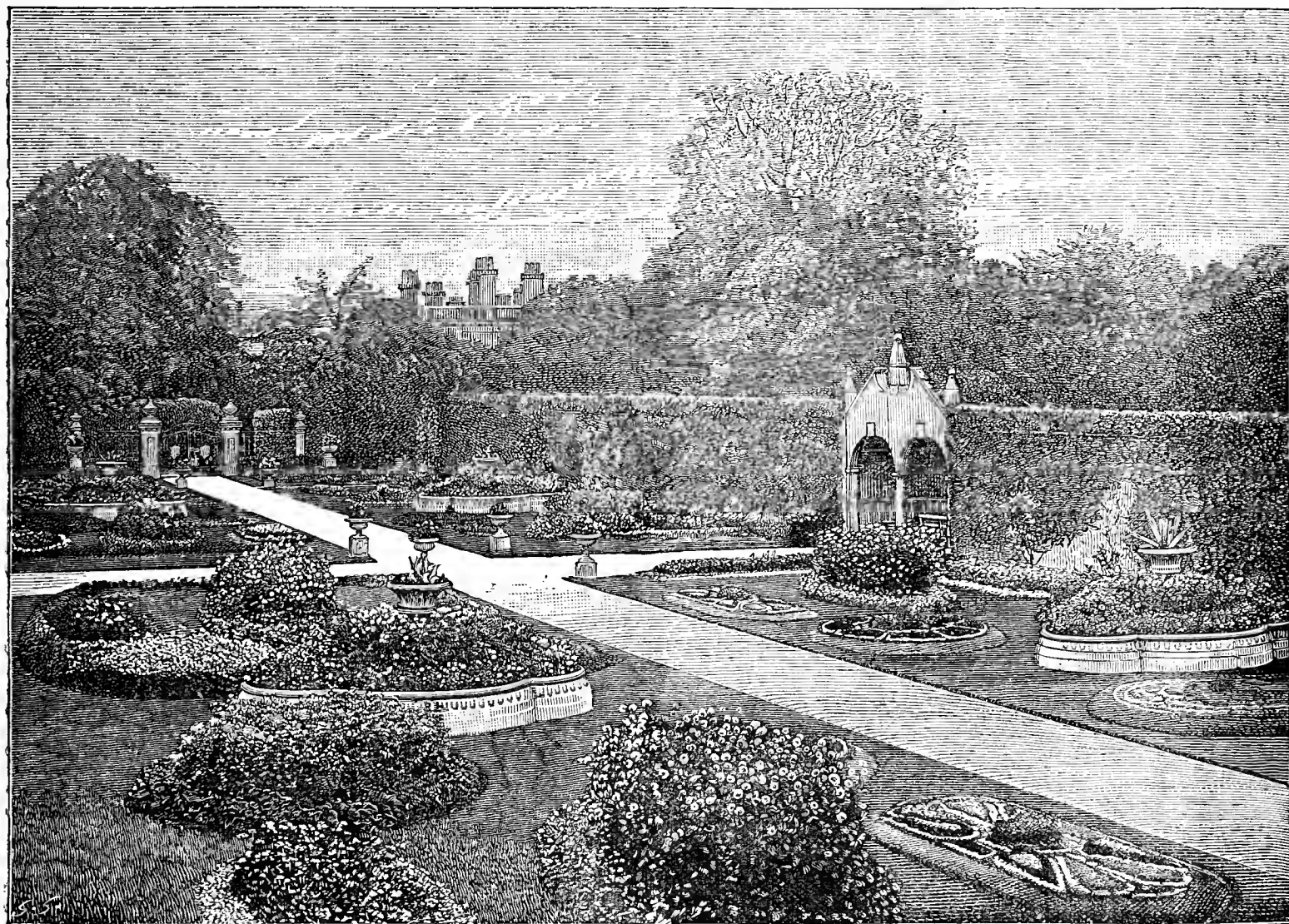


FIG. 33.—DOGMERSFIELD—THE FLOWER GARDEN.

justified its name, and these were surrounded with the Ivy-leaf Pelargonium Fürstin von Hohenzollern.

This garden is flanked on the left by a very high wall covered with Tea Roses and some fine old Magnolias now in bloom, under which runs a border of *Sedum spectabile*. On the right is a grassy slope flanked by a solid wall of closely cut Yew, and on each side are pleasant alcoves wherein to sit and contemplate the beauty of the scene.

THE CONSERVATORY.

No space is lost at Dogmersfield. A border of yellow Marguerites, *Heliotrope*, and *Begonia Princess Beatriee* runs the whole length of the conservatory, which we now enter. Here are fine specimens of such plants as *Lilium auratum*, Orchids, *Cypripedium insigne*, *Begonias* in all colours, *Chrysanthemums* Madame Desgrange and G. Wernig, &c., *Coleuses* in different varieties, and Ivy-leaf Pelargoniums, including *Souvenir de Charles Turner*, *Galilee*, *Alice Crousse* &c., with remarkably fine blossoms. These were also used in the hanging baskets, their lovely drooping branches filling the upper space. On the walls were *Lapagerias* red and white, covered with their pretty waxen bell-shaped flowers; also a trained *Heliotrope*, which blooms all the year round. *Fuchsias* of different sorts add to the brightness, which is relieved by

and shrubby plants, Dahlias, single, double, and Cactus; Zinnias of all shades; Marguerites, white and yellow Everlastings; edgings of the blue Lobelia, &c. Nor must we omit to mention the old-fashioned garden which contains old-fashioned flowers and sweet-swalling herbs. This is a favourite spot, and at the end of it is an ancient Apple tree with a cosy seat. Clematis arches covered with masses of rich purple blossom span the different walks in the kitchen garden and leading to it, and these are every year a great source of admiration.

The small plant house is filled with a very healthy stock of various plants for winter flowering, among them Poinsettias, Euphorbias, Eucharises, Gardenias, Cypripediums, and various other Orchids.

FRUIT

After lingering a long time in this pleasant region of flowers I passed on to one equally tempting—that of fruit. Grapes in the early vineries had all been cut, but of late Grapes there was a fine show of superb bunches, which, alternating in black and white and surrounded by healthy looking foliage, formed a most refreshing and pleasing picture. Alicante, Gros Colman, Muscat of Alexandria appeared to be the sorts principally grown.

In the Fig house a large second crop of fine Figs are now ripening,

and here I was shown a Maréchal Niel Rose, budded last summer, which has thrown out a number of large shoots from 12 to 16 feet long, and is still growing, apparently quite free from blight, and very healthy looking.

The Peach house was empty, the first crop having come to an end, but in the open some heavy crops of fine luscious fruit were seen on the walls. Such sorts as Noblesse, Barrington, Grosse Mignonne, and Princess of Wales did honour to their names, both as to quantity and quality.

Pears are a special feature at Dogmersfield, and some very fine fruit is grown, Williams' Bon Chrétien, Jargonelle, Madame Treve, and others. Those for exhibition are chosen from Pitmaston Duchess, Beurré Diel, Beurré Clairgeau, Beurré Bachelier, and King Edward.

Strawberries are grown in quantities averaging over a thousand plants, and there is still some fruit in the open. Vicomtesse Hericart de Thury, Keens' Seedling, President, and Sir Joseph Paxton are the favourite sorts, and they answer well here.

Tomatoes are showing plenty of fruit indoors and out.

The fruit room is beginning to receive its autumn stores, a quantity of fine Pears and Peaches being already on its shelves.

The kitchen garden shows an abundance of vegetables of all sorts, with salads and culinary fruits.

Sir Henry St. John Mildmay is fond of his garden, and takes a great interest in it, and he is fortunate in having a gardener who knows how to make the most of the resources entrusted to him, Mr. Trinder having almost if not quite solved the problem, "How to have plenty of flowers, fruit, and vegetables from January to December."—H. A.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 17TH.

THIS meeting was not a largely attended one, either by exhibitors or visitors, but there were sufficient Dahlias and miscellaneous exhibits with fruit to occupy the Committees for an hour or two. The weather was extremely fine, but the sharp frost in the morning had injured some outdoor plants and flowers.

FRUIT COMMITTEE.—Present: R. D. Blackmore, Esq., in the chair, and Messrs. Philip Crowley, J. Cheal, W. Bates, J. Willard, G. Bunyard, A. J. Pearson, T. J. Saltmarsh, G. Wythes, J. Hudson, H. Balderson, F. Q. Lane, Harrison Weir, G. Cummins, C. Haycock, J. Wright, and Dr. Hogg. Mr. Ross, Welford, sent a seedling Pear from Calebasse Grosse, a handsome-looking fruit, resembling Doyenné Boussoch, and, like it, decaying at the core. Quality not superior (passed). Mr. Brutton, Yeovil, sent fruits of Brutton's Perfection Melon, smooth, yellow, slightly netted, medium-sized fruits of moderate quality (passed). Mr. F. Taylor, Swindon Gardens, Cheltenham, sent a scarlet-flesh Melon named Swindon Hall Perfection, deep fleshed, rich in quality, but somewhat destitute in aroma. A good Melon, and only lost a certificate by two votes. Mr. G. Hawkins, Ewenny Priory, Bridgend, sent a ribbed Melon of fairly good quality, but appeared as if it had been cut too long for being presented in the best condition (passed).

Fruits of the so-called Melon Pear, *Solanum guatemalense*, bearing a general resemblance to those of the Egg Plant, were sent from Chiswick. They were grown in the same way as Tomatoes, and in quality reminded of a bad Melon with a suspicion of Cucumber flavour, a bitter-sweet mixture of essences that few if any palates could enjoy. It was generally considered useless for dessert purposes.

W. Roupell, Esq., Roupell Park, S.W., exhibited an interesting collection of eighteen varieties of Grapes grown in the same house, several of them (Frontignans) not often seen nowadays, though, if naturally small, very delicious. The following comprised the collection—Muscat Hungary, Canon Hall Muscat, very good; Mill Hill Hamburg, good; Purple Constantia, superior to Black Frontignan; Grizzly Frontignan, very good; Chasselas Musqué of Herr Horvath, inferior as compared with the Chasselas Musqué of Rivers; Dr. Hogg, excellent; Old Black Frontignan, Ascot Frontignan, Diamant Traube (certificated); Primavis Frontignan, Trovère Muscat, Trebbiano, Muscat Hamburg, Foster's Seedling, July Frontignan, and American Strawberry. A silver medal was unanimously recommended for this collection, and a first-class certificate was awarded for *Diamant Traube*. This is a nearly round white Grape of refreshing quality, with good sized berries but not large bunches. It is not new, but Mr. Barron says, in his "Vines and Vine Culture," was received from M. Leroy of Angers many years ago, but lost sight of for a time. It ripened in an unheated house at Chiswick. The Committee were of opinion that the variety was capable of development by good culture, and might form a valuable companion to the Black Hamburg. In berry it is superior to either Foster's Seedling or Buckland Sweetwater—to the former in size, and the latter in quality—and it will be suitable for growing with little artificial heat.

Messrs. William Paul & Son, Waltham Cross, exhibited an extensive collection of Apples, nearly all the varieties, upwards of seventy, being represented in admirable condition. Messrs. Paul also staged a number of good Pears (silver medal). Messrs. John Laing & Sons exhibited nearly forty very fine dishes of Apples (bronze medal). Mr. Charles Edwards, Newton House, Brickley, exhibited two dishes of Apples, Ecklinville Seedling and Lord Suffield, for which a cultural commendation was awarded.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair; Messrs. R. Dean, W. Holmes, B. Wynne, Lewis Castle, T. W. Girdlestone,

J. Walker, W. C. Leach, C. Noble, E. Mawley, W. Goldring, George Paul, Shirley Hibberd, J. Douglas, and Dr. Masters.

Mr. C. Ross, Pendell Court Gardens, Bletchingley, exhibited five flower heads of *Aphelandra cristata* with long tubular scarlet florets—large elliptical leaves. It is a fine old plant rarely seen in good condition, and a cultural commendation was awarded. The specimens were gathered from a plant 4 feet high, planted out in a stove and bearing thirty large heads. From the same exhibitor came flowering shoots of *Hibiscus pedunculatus*, a cool greenhouse shrubby plant with soft pale green leaves and large deep pink flowers (vote of thanks).

Messrs. J. Veitch & Sons, Chelsea, had a large collection of greenhouse *Rhododendrons* in many colours and choice varieties, a group of *Hydrangea paniculata grandiflora*, *Berberis vulgaris* loaded with its coral red fruits, *Eucalyptus coccifera* shoots, *Ceanothus azureus albidus*, *Gloire de Versailles*, *grandiflorum* (blue), and the pink *Marie Simon*. Specimens of *Daphniphyllum glaucescens* were also shown.

Messrs. Dobbie & Co., Rothesay, exhibited excellent blooms of double yellow, striped and crimson, and single Marigolds, the strain being commended. Mr. R. Dean, Ealing, had blooms of African and French Marigolds, an award of merit being granted for a double white *Dianthus Heddewigi* named Snowflake. Mr. G. Stevens, Putney, sent blooms of Japanese *Chrysanthemum* Sam Henshaw, purplish upper surface to the florets, silvery reverse; and Annie Stevens, with narrow twisted florets, white, sulphur centre, a good early variety (award of merit). Messrs. J. Laing & Co., Forest Hill, had a group of early flowering *Chrysanthemums* (vote of thanks).

Messrs. Wm. Paul & Son, Waltham Cross, contributed six boxes of Roses, remarkably fresh and grand for the time of year (bronze medal). Messrs. Dickson & Co., Edinburgh, sent two border Carnations named Maggie Lauder, soft pink; and W. M. Welsh, dark scarlet.

Dahlias afforded a brilliant display, and it is probable that they are the last that will be exhibited this season, as some were evidently damaged by the frost on the morning of the day they were cut. Messrs. Paul & Son, Cheshunt, had an extensive and beautiful display (silver medal). Messrs. Laing & Son, Forest Hill; Messrs. Rawlings & Sons, Romford; and Mr. J. T. West, Brentwood, also exhibited well, bronze medals being awarded to all. Mr. C. Turner, Slough, showed several stands of good blooms, and T. W. Girdlestone, Esq., Sunningdale, Berks, had a stand of graceful single Dahlias, mostly varieties he has raised himself. An award of merit was granted for Hester Dorothea, deep maroon, very rich colour, and neat flower.

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair, and Messrs. J. Douglas, C. Pilcher, J. O'Brien, and J. Dominy. There were few exhibits before this Committee, but botanical certificates were awarded for *Disperis Fannina* from A. H. Smee, Esq., Wallington, a peculiar little plant with white hooded flowers in a spike like a small Monkshood. From the same garden came *Masdevallia vespertilio*, with small flowers, buff coloured, with crimson dots, and a similar award was granted for it.

CERTIFICATED PLANTS.

First class certificates were awarded for—

Cattleya Miss Harris (Miss Harris, The Grange, Lamberhurst).—A cross between C. Schilleriana and C. Mossiae, partaking largely of the floral form of the first named species, with a rich crimson lip, and lighter crimson sepals and petals, the colour apparently chiefly derived from C. Mossiae.

Miltonia vexillaria Leopoldi (Baron Schröder).—Flowers of moderate size, pale rose, with a central triangular blotch of deep maroon.

Watsonia iridifolia (J. O'Brien).—Flowers of good size and shape, pure white, ten in a spike, the leaves 2 feet long and more, narrow and Iris-like, said to be the only pure white Irid known.

AWARDS OF MERIT.

Coleus Cleopatra (Hewitt & Co., Solihull).—Leaves of great size, green centre, crimson towards the margin, and yellow or green crenated edge.

Dahlia Conquest (G. S. P. Harris, Orpington).—A peculiar pale purplish mauve, the bloom deep, well proportioned, and even.

Dahlia Marmion (C. Turner).—A fine bloom with yellowish ground colour, striped with crimson.

Dahlia Centenary (Mr. J. T. West).—A Cactus variety, very large flower, of a brilliant crimson scarlet colour, well formed and effective.

Dahlia Gulielma (J. Cheal & Son).—A single variety, with white florets bordered with orange, very distinct.

Dianthus Heddewigi Snowflake (Dean), *Chrysanthemum Annie Stevens* (Stevens), and *Dahlia Hester Dorothea* (Girdlestone), are described in the preceding notes.

STRAWBERRY GROWING.

MR. EASTY's article under the above heading was interesting, as his writings always are, and his expressed opinions will tend to strengthen reports previously given on the merits of Laxton's Noble Strawberry. I have not yet had the privilege of proving its qualities myself, but hope to do so next season. One good variety has not been mentioned by Mr. Easty which deserves notice, and that is Loxford Hall Seedling. This variety has long since been recognised as being above average merit, and those who intend extending their plantations in variety should not fail to give it a

trial. It is of moderate growth, consequently does not require so much space as most sorts, an advantage with those having gardens of moderate dimensions. I obtained my stock from Mr. J. Gibson, Draycot Gardens, Chippenham, who is, by the way, an excellent private grower of Strawberries. With him all varieties, with the exception of the latter, are planted a yard apart between the rows, and 18 inches only from plant to plant. This method is found more economical than the one more generally adopted with private growers—2 feet each way, as more space is allowed for walking between for gathering and attending them; 18 inches provides ample room between the rows, and 15 inches proves sufficient space for dividing the plants of the Loxford Hall variety.

Mr. Easty remarks that his crops were the heaviest he ever had, and attributes the success chiefly to the use of artificial manures. In every instance in which I have directed inquiry as to the Strawberry crops I have learned that they have been the heaviest ever remembered—some attributing the cause to the treatment bestowed, others believing that climatic conditions accounted more chiefly for the heavy crops produced. One individual laid much stress on a close cropping of the leaves at midwinter, in providing him with an abundant supply from a bed which had hitherto proved unprofitable.

Mr. Iggulden has recently enlarged upon a system of growing them as annuals, and I have had proof of their adaptability for such a method in the Marston Gardens, but in the gardens in which I have hitherto had charge the crop have never proved a full one until the second year.

Like Mr. Easty I have good faith in the use of fish manures, but I believe constant moisture is necessary in bringing out its fertilising properties for the use of plant growth. If applied very early in the spring, and followed up with an early mulching, they would prove sustaining; but if used late, and when dry weather prevails, they do not then prove of much assistance to the plants until late summer or autumn rains carried it down to within reach of the roots. Of course, when artificial watering can be resorted to the above remarks do not hold good, but in many gardens unfortunately water is not forthcoming for deluging extensive Strawberry beds. Dr. Hogg and Cockscomb are two excellent varieties, but the latter is not very frequently grown. I believe these two are among the sweetest kinds for dessert procurable. Excepting Noble Sir Joseph Paxton is the most useful and popular Strawberry grown, and were I restricted to one sort only it would certainly be this one.—W. S.

HORTICULTURAL SHOWS.

ANCIENT SOCIETY OF YORK FLORISTS.

THIS Society closed its series of Shows for the summer months on the 11th inst. with an excellent floral display, Dahlias being shown in capital form, Mr. W. Boston, Carthorpe, Bedale, taking chief honours in the Show and Fancy classes, his blooms being superbly finished in form and colour. Besides his competing trays he staged seventy-two blooms, noticeable amongst which was a really good new yellow variety named Miss Hannah Boston; Messrs. J. W. Hutchinson, G. Kirken, and T. Smith being principal prizewinners in other classes of Dahlias. Asters and Marigolds were numerous shown, and very meritorious. Gladiolus were almost a failure, doubtless owing to the fine season having hastened them, so that they are now past their best. The annuals shown were in high perfection, each variety being made up into what may be termed hand bouquets. Of hand bouquets there was a smart competition in the two classes—viz., cultivated and wild flowers, which possessed great merit, and were much admired. Classes were introduced for early flowering Chrysanthemums, but these were not well represented.

The series of five shows held this summer have been much in advance generally of any previous year, and being free to the public have been much appreciated. The Society, it may be said, has extended its area of usefulness much during late years. Much interest surrounds it, doubtless through its origin being so antiquated, dating as it does from the year 1768. The operations of the present year close with the Chrysanthemum Show to be held on the 20th, 21st, and 22nd of November, which now ranks as one of the best in the country.

A plant bearing a fine flower spike of *Aerides Rohaniana* was exhibited by Mr. T. M. Weddall, J.P., for which a certificate of merit was granted.

ROYAL CALEDONIAN.

THIS was held on the 11th and 12th inst., in the Edinburgh Waverley Market, and proved to be one of the largest autumn exhibitions ever held by this Society. Fruit is, as a rule, the predominating feature, and, though it cannot be said to have been an exception to the rule this year, yet the quality of the Grapes, which is generally so fine at this Show, was somewhat below the average. The Newcastle Exhibition, held on the same days, had doubtless something to do with this. Apples, on the other hand, were exceptionally fine, the border counties contributing fine fruit; and, of course, Plums were represented in great numbers, 1000 dishes being staged for Congress purposes alone. Vegetables have never been finer, Leeks, Celery, Onions, Tomatoes, &c., being present in large numbers and of grand quality; but flowers were pretty

well shown, and the plant classes were generally better filled than usual.

In the classes devoted to trade growers the chief exhibits were the tables of plants, 40 feet by 10 feet, arranged for effect. Two firms staged, Messrs. R. B. Laird & Sons being first, and Messrs. Ireland and Thomson second, the competition being rather close. The first-mentioned also led with Palms, table plants, and for twelve plants Chrysanthemums, while the latter were first for a collection of Conifers and hardy shrubs very effectively arranged. Messrs. Dickson & Sons were second for a very good collection. In the cut flower section Messrs. Cocker & Sons, Aberdeen, were first for thirty-six Roses, also for eighteen, and Messrs. D. & W. Croll, Dundee, first for twelve Roses. Most noteworthy were Mrs. J. Laing, Maid of the Mist, A. K. Williams, and Francisca Kruger. Mr. Campbell, Gourrock, had the best thirty Gladiolus. Mr. Forbes, Hawick, had the best Hollyhocks; Messrs. R. B. Laird & Sons the best single Dahlias and cut Chrysanthemums, Messrs. Cocker the finest Show Dahlias, and Mr. Campbell, Auchinraith, the best Fancy Dahlias.

In the gardeners' section the chief prizes were offered for a table of plants 20 feet by 5 feet arranged for effect, there being four competitors. The Judges awarded first place to Mr. Fraser, gardener to J. White, Esq., Ardarroch; second to Mr. Grossart, gardener to J. Buchanan, Esq.; and third to Mr. McIntyre, gardener to Mrs. Pease, Woodside, Darlington. The general opinion was, however, that the first ought to have had the third place, the Judges having been most evidently biased by the Orchids employed, though it was less effectively arranged, the second group being the most artistic of the three, while that of Mr. McIntyre was very bright with Crotons of grand colour. Mr. John Patterson, Millbank, had first for six stove or greenhouse, two Ericas, a fine Eucharis, and *Lapageria alba* being his chief plants. Orchids were good for the season. Mr. Curror, Eskbank, was first for four species, *Cattleya Dowiana* and *Miltonia spectabilis* being the more noteworthy plants. Mr. Fraser had the best two Orchids, and Mr. Curror with a plant of *Cattleya Gaskelliana* took first prize for one Orchid. Foliage plants were very numerous, but no prize ticket could be found on the first exhibit, the second going to Mr. Grossart. Mr. Napier with fine plants had first for *Adiantums*, Mr. Grossart for six exotic species, and Mr. Patterson for three *Gleichenias*. Mr. Grossart had the best *Dracaenas*, tall, strong, well coloured plants, while the best Crotons were furnished by Mr. Brotherston, gardener to the Earl of Haddington, Tynninghame. Mr. Patterson had the finest Cape Heaths, not large, but healthy well-bloomed plants. Mr. J. Pearson, Beechwood Gardens, staged six fine specimens of Chrysanthemums for first prize, while of Fuchsias, Pelargoniums, and Begonias there was a very satisfactory display.

In the fruit section there were six exhibitors with twelve dishes of fruit, of whom Mr. McKinnon, Melville Castle Gardens, Lasswade, was successful in obtaining first place. Of Grapes there were magnificent Alicante and Gros Maroc, good Black Hamburg, beautiful Golden Hamburg, and fair Muscat of Alexandria. Peaches were good, Pitmaston Duchess Pears fine, the other dishes being Lord Strathmore Melons, Marseilles Fig, Pitmaston Orange Nectarine, Queen Apples, Jefferson Plum, and Moorpark Apricots. Mr. McIndoe, Guisborough Hall Gardens, second with good Gros Maroc, Gros Colman, and Black Hamburg Grapes, grand Pitmaston Duchess Pears, and very fine Exquisite Peaches. Mr. McKelvie, Broxmouth Park, Dunbar, third.

For eight dishes of fruit Mr. McIndoe was placed first, some of the Grapes being rather deficient, though the exquisite Peaches, Doyenné Boussoch Pears, and Washington Apples were fine; Mr. Murray, Culzean, Ayr, second with better-looking fruits, and Mr. Morrison, Archerfield, Drem, third. Mr. Fairgrieve, Dunkeld, had the best collection of hardy fruit, and Mr. McIndoe the best collection of orchard house fruit. For six bunches of Grapes Mr. McKinnon was easily first with magnificent Alicante, Gros Maroc, Mrs. Pince, fine Black Hamburg, and well-coloured Muscat of Alexandria; Mr. Boyd, Callander House, Falkirk, second with all black Grapes, small in berry and of fine finish; and Mr. Murray, Polmont, whose splendid Muscat of Alexandria and Alicante would, with some judges, have given him a higher place. Mr. Boyd had first prize for four bunches; Mr. McHattie, Newbattle Abbey, the two best Muscat of Alexandria with splendidly coloured large clusters. Mr. Boyd had the two finest bunches of Black Hamburg, splendidly finished; Mr. Morrison had the best single cluster of Muscat of Alexandria; Mr. John Caldwell the best Alicante, a fine example; Mr. McKinnon the finest Gros Maroc; Mr. Murray grand Gros Colman; and Mr. Caldwell a fine cluster of Duke of Buccleuch, the best white of any other sort not named in the schedule. Mr. McIntyre, The Glen, had the two best Pine Apples and a single Smooth Cayenne; and Mr. Muir, Margam, the best Queen. Peaches were rather poor, Nectarines not large, and of Plums there was a fair display. Apples were very largely shown, Mr. Murray, Culzean, having the best collection of twelve sorts. Duchess of Oldenburgh, Stirling Castle, Irish Peach, Warner's King, Keswick Codlin, Ecklinville Seedling, Alfriston, were among the best of the Apples shown in large quantities. The best Pears in single dishes were Souvenir du Congrès, Doyenné Boussoch, Jargonelle, Marie Louise, Louise Bonne, and Beurré d'Amanlis. The best six varieties of Pears were shown by Mr. Cairns, The Hirsell, Coldstream.

Cut flowers were not very numerous; Gladiolus were in fair numbers, but not of the highest quality. Roses from Mr. Parlange, Helensburgh, very good. Mr. Pearson showed fine examples of Dahlias. Mr. Rushton, Corstorphine, showed twelve magnificent blooms of Madame Desgranges and G. Wermig Chrysanthemums.

The collections of vegetables were numerous, and the quality all

through good. For the Veitch Memorial medal and £7 the competition was very close, Mr. Tender being placed first, and Mr. Cairns, Mounteviot, Jedburgh, second. The Celery, Onions, Tomatoes, Cucumbers, Cauliflowers, and Leeks being especially fine in both collections. The Lyon Leeks shown by Mr. Cairns being considered among the finest examples ever shown. For the prizes offered by Messrs. Sutton and Sons, Reading, Mr. Bigham, Edgerton, was first, and Mr. McBean, Johnstone, second. The best collection of salads was staged by Mr. Milne, Sunnybank. In the singledishes of vegetables, Celery, Leeks, Onions, and Tomatoes were especially fine.

Of miscellaneous exhibits there was a large and excellent display. Among the more noteworthy was a fine collection of 120 varieties of Apples from Messrs. J. Veitch & Sons, Chelsea, about sixty dishes of Pears from the same firm, as also some beautiful Nephentes and cut herbaceous flowers. A table of over 400 varieties of Ferns from Messrs. Sale, Birkenhead, excited much interest as much on account of the healthy appearance of the plants as by the rarity and beauty of many of them. Messrs. J. Laing & Sons contributed examples of their fine Begonias. Local firms were represented by Messrs. Dickson & Co., Waterloo Place, who with plants staged an interesting series of Apples and many florist flowers. Messrs. J. Methven & Sons, Princes Street, had a beautiful assortment of decorative stove and greenhouse plants, while Mr. John Downie, Princes Street, had a large table of good Begonias; Munro & Ferguson showing cut herbaceous flowers. Messrs. Laing & Mather, Kelso, had many border and Clove Carnations and Gladioli; Mr. Campbell, High Blantyre, Carnations and Picotees; and Mr. Forbes, Hawick, a representative of collection of Hollyhocks, Dahlias, Antirrhinums, Pentstemons, &c. Mr. Devereil showed examples of Onions of great size, which attracted very much attention; and to Mr. Murray, Culzean, a first-class certificate was awarded for a large red seedling Onion named "Black Douglas." The Exhibition was attended by many thousands of people during the two days it was open, the weather being dull but fine.

EDINBURGH PLUM CONGRESS, 1889.

THE best varieties of Plums exhibited in the various collections were, taking the collections in the order in which they were staged, Gordon Castle, October Green Gage, Webster's Seedling, Aurora, and some others of his numerous collection of unnamed seedlings were the best in the lot exhibited by Mr. Webster, Gordon Castle Gardens, Morayshire; Mr. Forrest, Haddo House, Aberdeen, had Goliath, Jefferson, Washington, and Nectarine (very fine); Mr. Crosbie, Buchanan Castle, Stirlingshire, Jefferson, Kirke's, Magnum Bonum, and Victoria; Mr. Sutherland, Langwell, Caithness, Nectarine, and Victoria (very good for so far north); Mr. Smith, Cullen House, Banff, Lawson's Golden Gage, and Emperor; Mr. McLeod, Harvieston, Clackmannanshire, Washington, Coe's Golden Drop, and Magnum Bonum; Mr. Whitton, Glamis Castle, Forfarshire, Transparent Gage, Pond's Seedling, and Victoria; Mr. McIntosh, Paxton House, Berwick-on-Tweed, Magnum Bonum and Pond's Seedling, very fine; Mr. McKelvie, Broxmouth, Dunbar, Kirke's, Magnum Bonum, Transparent Gage, and Jefferson; Messrs. Dicksons and Co., nurserymen, Edinburgh, Grand Duke, Goliath, Webster's Golden Gage, Victoria, Cox's Emperor, Lawson's Golden Gage, Nectarine, Reine Claude de Bavay, and Transparent Gage; Mr. Dunn, Dalkeith, Transparent Gage, Jefferson, Kirke's, Coe's Golden Drop, Reine Claude de Bavay, Goliath, Belgian Purple, Pond's Seedling, and Prune Damson, Mr. McHattie, Newbattle Abbey, Victoria, Jefferson, Washington, and Lawson's Golden Gage, very fine; Mr. McKinnon, Melville Castle, Belle de Louvain, Pond's Seedling, Victoria, and Washington; Mr. Bowman, Pittendreich, Lasswade, Lawson's Golden Gage, extra fine; Jefferson, Pond's Seedling, Magnum Bonum, and Victoria; Mr. Taylor, Inveresk House, Musselburgh, Washington and Oullins Golden; Mr. Morrison, Jefferson, Victoria, Goliath, and Magnum Bonum (very fine); Mr. Williamson, Tarvit, Cupar Fife, Jefferson, Magnum Bonum, Washington, Pond's Seedling, and Goliath; Mr. Elliott, Blackadder, Berwickshire, Belgian Purple, Magnum Bonum, Lawson's Golden Gage, and Jefferson; Mr. Milne, Minto House, Roxburghshire, Goliath and Victoria; Mr. Watt, Priorwood, Melrose, Jefferson, Magnum Bonum, Goliath, Kirke's, and Transparent Gage; Mr. Thomson, Eildon Hall, Newtown, St. Boswell's, Green Gage, Jefferson, Magnum Bonum, and Lawson's Golden Gage (very fine); Mr. Gunnison, Kingsmuir, Peebles, Kirke's, Jefferson, and Coe's Golden Drop.

Mr. Thomson, Garvald House, Peebles, Goliath and Victoria; Mr. McKinlay, Blackwood, Lanarkshire, Goliath and Cox's Emperor; Mr. Angus, Dalzell, Motherwell, Kirke's, Jefferson, and Goliath; Mr. Brown, Abercainey, Perthshire, Coe's Golden Drop, Kirke's, Magnum Bonum, Victoria, Goliath, and Prince of Wales; Mr. Whitton, Methven Castle, Perth, Guthrie's Topaz (very fine), and Washington; Mr. Harper, Tullibelt, Perthshire, Coe's Golden Drop, Kirke's, and Cox's Emperor; Mr. Fairgrieve, Dunkeld, Caledonian, Pond's Seedling, Cox's Emperor, Victoria, Kirke's, Magnum Bonum, and Jefferson (all very fine); Mr. King, Blairdrummond, Doune, Perthshire, Cox's Emperor, Jefferson, and Magnum Bonum; Mr. McKinnon, Scone Palace, Perth, Brahy's Green Gage, Diamond, Pond's Seedling, and Kirke's (very fine); Mr. Reid, Solsgirth, Dollar, Goliath and Victoria; and Mr. McLennon, Castlewigg, Wigtonshire, Jefferson, Kirke's, and Coe's Golden Drop.

Among the collections sent from England the finest varieties were from Mr. Harris, Alnwick Castle, Northumberland, Kirke's, Victoria, Lawson's Golden Gage, Cox's Emperor, Prince Englebert, and Pond's Seedling; Mr. Clarke, Lowther Castle, Penrith, Magnum Bonum, Goliath, Kirke's, and Lawson's Golden Gage; Mr. Christie, The Castle,

Warwick, Jefferson, Belgian Purple, Pond's Seedling, Reine Claude de Bavay, and Magnum Bonum; Mr. Watkins, Pomona Farm, Hereford, Diamond, Magnum Bonum, Peach Plum, Pond's Seedling, Oullins Golden, Green Gage, Prince Englebert, and Cox's Emperor (all very fine); Messrs. R. Smith & Co., St. John's Nurseries, Worcester, Goliath, Coe's Golden Drop, Cox's Emperor, Diamond, Reine Claude de Bavay, and Magnum Bonum (large and fine); Mr. Smith, Mentmore Gardens, Bucks, Green Gage, Transparent Gage, Grand Duke (extra fine), Sultan, Mitchelston, Jefferson, Kirke's, Cox's Emperor, and Reine Claude de Bavay, with fine samples of the following Damsons—Shropshire, Worcester, Farleigh, Prune, and Mussel.

Mr. Alexander, Warley Place, Great Warley, Essex, had very fine Magnum Bonum, Goliath, and Jefferson; Messrs. Lane & Son, nurserymen, Berkhamstead, Herts, Jefferson, Prince Englebert, Sultan, Prince of Wales, Diamond, Pond's Seedling, Cox's Emperor, and Grand Duke, all large and very fine; Messrs. Veitch & Sons, Royal Exotic Nursery, Chelsea, Transparent Gage, Reine Claude Violette, Brahy's Green Gage, Reine Claude de Bavay, Lawson's Golden Gage, Frogmore Late Gage, Jefferson, Magnum Bonum, Prince Englebert, Pond's Seedling, Boulouf, and Decaisne, all extra fine, the last named two being little known varieties of great promise; Mr. Barron, Royal Hort. Society's Gardens, Chiswick, Belle de Septembre, and Poupard, extra fine, with interesting samples of the French Prune Plum, D'Agén, the true Prune Damson, the White Damson, Coe's Late Red Plum, Winesour Plum, and Royal Bullace; Messrs. G. Bunyard & Co., nurserymen, Maidstone, Kent, a very interesting lot of bearing branches of Plums and Damsons, including King of the Damsons (large and fine), the Old Sweet Damson (small, but sweet and pleasant), Crittenden Damson (very heavily with fruit), Reine Claude de Bavay, and Magnum Bonum; Mr. Rust, Eridge Castle Gardens, Sussex, Guthrie's Green Gage, Transparent Gage, Diamond, Pond's Seedling, Washington, and Grand Duke, all excellent, and grown at an altitude of 400 feet above sea level.

From Ireland were sent about half a dozen fine collections, containing many samples of considerable excellence, the most notable of which were from Mr. Warwick, Shanes Castle; Co. Antrim, Jefferson, Transparent Gage, and Magnum Bonum; Mr. Cumming, St. Helen's, Co. Dublin, Magnum Bonum, Goliath, and Victoria; Mr. Whytock, Coolatin, Shille agh, Co. Wicklow, Belle de Septembre, Prince Englebert, Coe's Golden Drop, Pond's Seedling, and Diamond; Mr. Cobban, Garbally, Ballinasloe, Co. Galway, Kirke's, Coe's Golden Drop, Goliath, Pond's Seedling, Jefferson, and Magnum Bonum; Mr. Richard Hartland, The Lough Nurseries, Cork, Reine Claude de Bavay, Decaisne (extra), Magnum Bonum, Archduke, and Kirke's.

BRIGHTON SHOW.—SEPT. 11TH AND 12TH.

SUSSEX is one of England's favoured counties as regards climate, and it is only fitting that horticulture should be represented in its best form, both in gardens and shows. For a considerable time the Brighton Exhibitions have been regarded as admirable examples of what provincial shows should really be—namely, displays of the local garden produce in competition, together with sufficient exhibits from a distance to prevent competitors becoming too restricted in their ideas of perfection. Of moderate extent, it has avoided the defects which frequently characterise the larger exhibitions, the most conspicuous being the admission of much inferior produce, simply with the object of filling classes and tent space. A carefully arranged schedule, fairly liberal prizes, and good competition have rendered the Show notable amongst those in the southern counties; but unfortunately in several years the attendance of visitors has not been proportionate to the merits of the display provided, consequently financial difficulties have occurred that have embarrassed the managers. The Secretary, Mr. Carpenter, has succeeded almost single-handed in reviving the Show more than once when it seemed that very unlikely another would be held, and he had the satisfaction last Wednesday and Thursday of seeing one of the best yet held in the rooms and ground of the Royal Pavilion. The weather also was most favourable, and we should be glad to hear that the receipts at the gates were sufficient to ensure a substantial balance.

Plants.—The two principal collections of specimen plants were from J. Warren, Esq., Handcross Park, Crawley (gardener Mr. Offer), who was first with twelve fine-foliage and eight stove and greenhouse plants, all well-known exhibition specimens, the Palms, Ferns, and Crotons of great size, and occupying much space in the lofty apartments of the Pavilion. Following in the same class were Col. Pepper, Milford Hall, Salisbury (gardener, Mr. J. Currey); and Mrs. Armstrong, Woodslea (gardener, Mr. Meahin), both of whom had well-grown plants. Sir A. Lamb, Beaufort, Battle (gardener, Mr. Portnell) exhibited capital examples of Ericas, gaining the chief award. *E. cinerithoides coronata* and *E. Aitoniana Turnbullii* being remarkable for their good training and abundance of flowers.

Groups are usually an important feature at Brighton, and on this occasion they also provided a considerable attraction, but there was a little falling off in the general quality as regards the groups of miscellaneous plants. Mr. J. Currey was adjudged the premier award for a fairly light arrangement of Crotons, Palms, Lilies, and Chrysanthemums, but a number of small and inferior plants had also been employed which greatly lowered the value of the group, so much indeed that many thought it was scarcely entitled to the position accorded it. In classes for groups of this character it is sometimes very difficult to distinguish between the respective merits of contending groups; and though it is advisable to encourage a light style of arrangement it is equally undesirable that a loose or careless style should be mistaken for

taste. Informality and naturalness are required, but not slovenliness, and exhibitors occasionally seem unable to distinguish between these extremes. Some also start well; they get the framework of the group worked out capably, but when it comes to the filling in all is spoiled; other perhaps give their greatest attention to the front or the back and the other portion having quite a distinct appearance and looking as if the plants had been huddled together in a hurry, which is usually the case if the time to be occupied is not carefully considered before starting and the work arranged accordingly. Examples of all these defects have quite recently come under notice, all from good exhibitors, who with a little more forethought might have readily avoided them. Then, too, when classes are provided for groups in which quality and effect have both to be considered, exhibitors are sometimes puzzled and rely too much upon the excellence of the plants they employ, neglecting the arrangement proportionately. The fact is, that anything approaching to what are termed "specimen plants" can seldom be employed with good effect in a group of moderate size, and even in the largest they usually have a heavy and disturbing appearance. At the same time weakly or insect-infested plants with discoloured foliage or with few, poor, or fading flowers should never be placed in a group for effect, even to "fill up;" they are certain to be noticed by any careful judges, and should reduce the chances of the exhibitor's success. In the class at Brighton noted above the second prize was awarded to Mrs. Armstrong, who had a group of which *Crotons*, *Lilium lancifolium*, *Palms*, *Ferns*, *Acalyphas*, and *Asparagus plumosus* were the leading features; and though some of the plants were rather large they were well and effectively arranged. Mr. G. Miles, Victoria Nursery, Dyke Road, was third, also for a good style of group, white *Lilies* and *Ferns* predominating, but a little more colour would have improved it.

The groups of *Ferns* always constitute a charming feature at this Show, and we have frequently commended the class and exhibits as worthy the attention of other societies. In so many gardens *Ferns* are now extensively grown for cutting purposes that it is not difficult to obtain sufficient for a group of fair size, and with comparatively few plants a most pleasing effect can be produced, particularly where some of the bolder looking broad fronded sorts are employed. Mr. Offer had the best exhibit, a diversified and fresh group with *Tree Ferns* at the back, a groundwork of *Adiantums*, and prominent raised corners of *Neottopteris* with rich green substantial fronds, and a few other distinct *Ferns* were scattered through the group. Mr. W. Miles, West Brighton Nursery, was a close second, having a large central specimen of *Nephrolepis davallioides* furcans, with smaller plants of *Adiantum* grouped around it. Mrs. Duddell, Queen's Park (gardener, Mr. Spottiswood) was third for a collection of *Adiantum cuneatum*.

Cut flowers have numerous classes devoted to them, and the exhibits produced an admirable display, proving how valuable these classes are in late summer and early autumn shows. With twenty-four bunches of stove and greenhouse plants Mrs. Gibson, Hill House, Saffron Walden (gardener, Mr. W. Archer), was awarded premier honours for excellent fresh and bright flowers of *Rondeletia major*, *Dipladenias*, *Ixoras*, *Allamandas*, *Lapagerias*, *Anthuriums*, *Statice*s, and *Tuberose*s. Messrs. Knight & Co. were second, also with good specimens. *Dahlias*, *Roses*, *Asters*, *Gladioli*, and hardy flowers were all good, Messrs. Paul & Son, Cheal & Son, Piper, Balchin, and R. Miller being the leading exhibitors. For three stands of flowers Mr. Rupert Miller, Shoreham, won the first prize for far the best contribution of the kind in the Show. A tall central stand was lightly filled with white *Anemones*, *Coreopsis*, white *Sultans*, tall *Grasses* and *Ferns*, the base consisting of yellow and white *Sultans*, white and scarlet *Cactus Dahlias*, *Coreopsis*, and foliage. The side stands were much smaller, chiefly containing *Lilium lancifolium* and yellow *Sultans*. Mr. G. Miles and Mrs. J. Lewis, Preston Park Avenue, followed. Messrs. Perkins & Son, Coventry, were the chief exhibitors of wreaths and bouquets, showing their usual tasteful productions.

Fruit was well represented in numerous classes, and though some of it was probably seen at the Crystal Palace Show recently, and consequently had a slightly "travel stained" appearance, there was abundance of fresh exhibits. Some of the most successful exhibitors were Dr. Withers Moore (gardener, Mr. Godby), Mr. C. J. Goldsmith, Beckenham, Mr. Spottiswood, Mr. Osman, and Mr. Duncan. Messrs. Sutton & Sons, Reading, offered prizes for vegetables, which induced good competition, and there were also numerous non-competing exhibits of plants.

NEWCASTLE-ON-TYNE.—SEPTEMBER 11TH, 12TH AND 13TH.

THE Durham, Northumberland, and Newcastle-upon-Tyne Botanical and Horticultural Society held their autumn Exhibition on the above dates in the Leazes Park, Newcastle. The Show was held nearly two months later this year in order to take place during the meeting of the British Association, and the latter behaved most handsomely to the Society by offering £100 for special prizes, which made a most substantial schedule. The officers of the Society were most hopeful of securing excellent weather, as September in the north up to the very morning of the Show was all that could be desired, but then rain came down in torrents nearly all day, to the disappointment of the Committee, exhibitors, and general public alike. The Committee and the Secretary, Mr. J. J. Gillespie, who is hard-working, painstaking, and courteous to all whom he comes in contact with, were much sympathised with. The weather improved before the close of the Exhibition, but was dull and threatening on Friday, and the Society are stated to have lost upwards of £200.

The Show was held in four large tents placed together and the sides taken out, so that visitors could see all over the Exhibition upon entering it. At night it was illuminated with the electric light, which was much admired, and the foliage plants, especially the magnificent *Dracanas* and *Crotons* of Messrs. Little & Ballantyne, were seen to the best advantage. The excellence of the staging arrangements as regards the flowering and foliage plants added greatly to the effect of the Exhibition, and the staging Committee, Messrs. Balfour, Wilson, and Gascoigne, who were indefatigable in the discharge of their duties, deserve much credit. Referring to the cultural excellence of the exhibits, it may be safely said that the Society has never held an Exhibition of a more satisfactory character; in fact, so far as it went it was one of the best in the country. Cut flowers of all kinds, embracing *Dahlias*, *Gladioli*, *Asters*, *Carnations*, herbaceous flowers, bouquets, and epergnes, were a grand display. *Hollyhocks* also were shown in great quantities, and many were pleased to see these old favourites again prominent on the exhibition table.

Specimen stove and greenhouse plants were better than they are now seen at most southern shows, although far behind the giants which were exhibited a few years ago by Messrs. Mould, Legg, Pewsey, Ciper, and others. The fact is, huge exhibition plants are losing popularity, and perhaps the time is not far distant when they will cease to be an important feature of horticultural exhibitions. They are giving place to bright, free, and tasteful grouping of ordinary indoor stock; and though there is less to astonish the inexperienced in the new order of things there is more to please, to interest, and to instruct. It is a great defect in the Newcastle schedule that there is no class for groups. They are looked for now both by cultivators and by the public, not only at urban, but at country exhibitions, and if Newcastle is to be considered the centre of north-English horticulture it must weigh these facts before another Exhibition comes round. Fruit was admirably shown; indeed, culturally considered, it was the best portion of the Show. Very liberal prizes were offered for collections, and close competition on the part of nearly all the best northern growers produced a display of great extent and of very high quality; indeed, with recollections of the fine display at the Crystal Palace on a recent occasion fresh in the mind, the gardeners of the north appeared thoroughly capable of holding their own with their confrères in the south had it been possible to meet in competition. Grapes were magnificently shown. They were as well, if not so extensively, staged as at the Crystal Palace, and were greatly admired. There was, however, some unpleasantness caused by the decision of the Judges in one or two classes.

There were no classes for vegetables, though a horticultural show can hardly be considered complete without them.

PLANTS.

For eight plants in bloom, £20 in cash and the Royal Horticultural Society's silver Banksian medal were offered. The latter went with the first prize of £8 to Mr. F. Nicholas, gardener to the Earl of Zetland, Upleatham, for good, well-balanced plants, not large, but healthy, clean, and profuse in bloom. They included *Ericas* *Marnockiana*, *emula-austriaca*, and *grandiflora*, *Stephanotis*, *Bougainvillea glabra*, and *Dipladenia amabilis*, the latter shown in excellent colour and extremely fresh. Mr. Nicholas is a new exhibitor, and has made a most creditable and encouraging beginning. There is no doubt that at no distant date he will make a name in the horticultural world. Mr. T. Suffield, gardener to Mrs. Kitching, Elmfield Gardens, Darlington, was second with fresh good plants, including capital specimens of *Allamanda Hendersoni*, *Lapageria rosea alba*, *Ixora Williamsi* (very good), *Clerodendron Balfourianum*, *Oncidium flexuosum* (very fine indeed), *Dipladenia amabilis*, and *Erica Marnockiana*. Mr. J. Morris, Park Road, Felling, was third, his best plant being a very fine *Vallota purpurea*. For eight foliage plants the Society offered prizes of £6, £4, £2, and £1 respectively, but they only brought three competitors, Mr. E. H. Letts, gardener to the Earl of Zetland, Aske Hall, being placed first with his well-known *Palms*, *Encephalartos Vroomi*, *Kentia australis*, *Cycas circinalis*, and *C. revoluta*, *Croton Johannis* (very good in colour), *Gleichenia rupestris glaucescens* and others. Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington, was second with *Croton interruptus angustifolius*, *Kentia Belmorcana*, a grand *Cycas revoluta*, and *Croton Sinitzianus*. Mr. Suffield was third. For six *Ferns* Mr. F. Nicholas was first with *Dicksonia antarctica leucostezia*, *Pteris scaberula*, *Lomaria zamiaefolia*, and *Gleichenia rupestris*; Messrs. McIntyre and Suffield following. *Ericas* were rather weak this year, Mr. E. H. Letts was first. *Liliums* and *Tuberous-rooted Begonias* were shown best by Messrs. Watson and Garret.

TABLE DECORATIONS.

Large plants were as usual an interesting display, and brought forth six competitors, Messrs. Suffield, McIntyre, and Johnston receiving the awards. Many *Palms* and *Dracanas* were shown in small pots, all effectively draped with *Lycopods*. Six competed with a vase or epergne for drawing rooms, and as epergnes always form a strong feature at the autumn exhibition, great interest was evinced in those staged. Mr. Jos. Turton, gardener to Thos. Hodgkin, Esq., Benwell Dene, was first with a neat arrangement of a Marsh stand, the top tiers arranged with *Centaurea Cyanus*, *Lilium Harrisii*, *Ixora*, &c. The next tier *Eucharis amazonica*, and the bottom *Allamandas* and *Ixoras*, all effectively arranged, and margined with *Adiantum gracillimum*, *Davallia Mooreana*, &c. This was really a very good epergne, the base, if anything, rather heavy for the light way the higher tiers of flowers were arranged. The second prize was given to Messrs. Webster, Sunderland,

for a well arranged epergne containing some choice flowers. Mrs. Oliphant, The Green Market, Newcastle, was third. For a basket of cut flowers Messrs. Perkins & Son, Coventry, were placed first. The handle was effectively covered with *Asparagus plumosus*, and the basket contained choice Orchids, such as *Cattleya Mendelli*, *Odontoglossum Alexandre* and *Caladium argyrites* used with much effect. *Maréchal Niel* Roses and white variegated *Acers* also told well. Baskets are almost a new feature at Newcastle, but they form a pleasing way of exhibiting flowers. Nine were shown, all tastefully arranged.

There were eight bridal bouquets, Miss E. Armstrong Bennett, a young local lady, was placed first, defeating Messrs. Perkins & Son, Coventry, an achievement of which she may be proud. She had *Dendrobium Dearth*, white *Asters*, *Stephanotis*, *Tuberoses*, *Pancratiums*, *Gardenias*, white *Lapageria*, *Rose Niphetos*, and *Eucharis amazonica*. This was a beautiful bouquet, well arranged, and the Fern evenly disposed all over it. Messrs. Perkins was also a charming bouquet, but rather too heavy with Fern. There seems to be a growing taste for increasing the size of bouquets; those at Newcastle were more than 18 inches high and 18 inches in diameter; these are too ponderous, and would be a heavy load for a bridesmaid to carry to church. In the class for hand bouquets there were nine entries. Messrs. Perkins & Son regaining their usual position of first with a beautiful bouquet, containing *Cattleya Mossiae*, *Pancratiums*, *Oncidium flexuosum*, *Lapagerias*, and *Tuberoses*. Miss E. Armstrong was second with a very good bouquet, evincing much skill and taste; and Mr. J. Jennings third. The ladies' sprays, also only recently shown at Newcastle, brought out fifteen competitors, Miss E. Armstrong being again first; she used *Odontoglossum Alexandre* and *O. flexuosum*, with *Adiantum gracillimum*. Mrs. Oliphant was second with *Tuberose*, *Zygopetalum Mackayi*, *Erica Marnockiana*, &c. Messrs. Perkins were third with *Odontoglossum Alexandre*, *Maréchal Niel* Rose, *Rhododendron Princess Royal*, and *Bouvardia*.

CUT FLOWERS.

For the buttonhole prizes there were thirty entries, the first falling to Mr. J. Battensby, Swallow, who used *Dendrobium thyrsiflorum*; *Bouvardia*; and a *Rose*, *Madame Falcot* type; and *Adiantum gracillimum*. Of twenty-four Dahlias, distinct, Fancies excluded, six lots were produced, the first prize going to Messrs. Clark & Son for a good stand of *Queen of the Belgians*, *William Keith*, *Rev. J. Camm*, *Ethel Britton*, *Harrison Weir*, *George Barnes*, *George Rawlings*, *Goldfinder*, and *Earl of Ravensworth* as their best blooms. Mr. R. Walker, Low Fell, Gateshead, was second with a very fine stand, including *Harry Keith*, *James Cocker*, *W. Stark*, *R. T. Rawlings*, *Clara*, and *Henry Walton*. Mr. J. Spoor, Swallow, was third. For twelve Dahlias, Fancy, the veteran exhibitor, Mr. Walker, was a good first, the best blooms being *Grand Sultan*, *Peacock*, and *Mrs. Saunders*. Messrs. H. Clark & Son were second with *Mrs. Saunders*, *Geo. Barnes*, *Hugh Austin*, *Lotty Eckford* (beautifully marked) as their best. For twenty-four Hollyhocks the Society offered £10 in prizes. Seven excellent collections were staged, Mr. Geo. Finlay, East Layton Hall, Darlington, being first with full grown, good centred, and large flowers, the best varieties being *L. Godin*, *Favourite*, *W. E. Gladstone*, *Lord Warkworth*, *Queen of Yellows*, *Peri*, and *Lord Dalkeith*. Mr. Geo. Rogerson, North Middleton, Morpeth, was second, with good flowers of *Cremorne*, *Leviathan*, *Maggie Bain*, and *Hercules*. *Gladioli* were shown extremely well. Mr. Alex. G. Campbell, Cove Gardens, Gourock, N.B., was first with splendid spikes, some containing sixteen flowers each, of *Le Phare*, *Crépuscule*, *Atlas*, *Conquerant*, and *Camille* amongst others. Messrs. Harkness & Son, Bedale, were second also with very good spikes. With twenty-four Roses, not less than twelve varieties, Messrs. J. Cocker and Sons, Aberdeen, were first, having very good fresh blooms for the time of year; *Madame Eugene Verdier*, *J. S. Mill*, *La France*, *Etienne Levet*, *Souvenir de Berthe*, and *Maréchal Niel*, were amongst the best. Messrs. Harkness & Son were second, and Messrs. Perkins & Sons third. Bunches of hardy herbaceous border flowers were in themselves a magnificent display. They have always been well shown at Newcastle, but on the present occasion they surpassed all previous displays, and received the admiration of every visitor, many of whom were astonished that so many fine flowers could be grown out of doors. Messrs. Harkness were first here with a fair collection, including large bunches of *Gaillardia grandiflora*, *Lilium Harrisii*, *Delphinium Mont Blanc*, *Helianthus maximus plenus*, *Harpalum rigidum* (very fine), *Papaver nudicaule*, *Anemone Honorine Jobert*, the ever charming *Senecio pulcher*, *Rudbeckia Newmanii*, *Coreopsis lanceolata*, *Chrysanthemum Madame Desgranges*, *Triteleia aurea*, *Erigeron speciosa*. Some splendid *Phloxes* named *Madame Desgranges*, a charming white, *Tritonia aurea*, and last two single *Pyrethrums*, marvellous for their colour, named *John Holborn* and *Hamlet*, the latter a lovely purple flower. This stand rivetted the attention of every lover of flowers. Mr. J. Short, Darlington, was second with a very good stand, in fact, no bad stand was exhibited. *Globe* and *Feathered Asters* were a very beautiful display, the flowers being large, finely formed, and of good colour. Mr. Wm. Sanderson, a veteran grower, was first in each class with splendid flowers. For twelve Carnations, also six Carnations (self or Clove), Mr. J. Dixon, senior, was first, and Mr. D. Owbridge won with *Picotees*. Mr. J. Garret won with *Zonal Pelargoniums*, having very fine trusses of *Lord Tredegar*, *Grand Duke*, *Princess of Wales*, and *Lizzie Brooks*. *Marigolds* and *Pansies* were also strongly competed for, Mr. Battensby winning with *Fancy Pansies*, and Mr. Geo. Davison with *Shows*, Messrs. A. Kerr & Son winning with *Marigolds*. For twelve bunches of cut flowers Mr. H. Johnston was first with *Ixora Williamsii*, *Eucharis*

amazonica, *Lapageria alba*, *Erica Marnockiana*, *Celosia*, and *Odontoglossum grande*, very good. Three lots were shown.

FRUIT.

We now come to the most important feature—fruit, of which, as before stated, there was a splendid display. For twelve dishes £17 was given by the British Association. There were four competitors. Mr. J. McIndoe, Hutton Hall, was deservedly placed first for a very meritorious collection. He had *Golden Champion* and *Gros Colman* Grapes finely finished, berries large, especially the latter, a *Queen Pine*, about 4 lbs. in weight; *Prince of Wales* Nectarines, *Pitmaston* Duchess Pears, *Scarlet Premier* Melon, *Ribston Pippin* Apples, *Magnum Bonum* Plums, and *Negro Largo* Figs. Mr. J. H. Goodacre, gardener to Lord Harrington, Elvaston Castle, Derby, was second, with *Muscat of Alexandria* and *Black* *Hamburgh* Grapes, *Queen Pine*, *Barrington* Peaches, *Hero of Lockinge* Melon, and *Garibaldi* Strawberry as his best; Mr. J. Hinks, Lambton Castle, being third with *Canon Hall* and *Alnwick* Seedling Grapes in good condition, *Queen Pine* rather too ripe, *Jefferson* Apple, *Royal George* Peaches, and *Beurré Diel* Pears of enormous size, about 22 ozs. each. Mr. Hunter has had them this year over 32 ozs. For eight dishes Mr. Goodacre was first with *Muscat of Alexandria* and *Alnwick* Seedling Grapes, both well shown; *Luscious* Melon, *Violette* *Hâtive* Nectarines, *Washington* Plums, *Barrington* Peaches, *Morello* Cherries, and a *Queen Pine* about 3 lbs. in weight. Mr. J. Hunter was second with two fine bunches of *Canon Hall* and *Black Alicante* Grapes, the bunches quite 18 inches long; *Pitmaston* Duchess Pears, *Noblesse* Peaches, and a *Queen Pine*. Mr. R. Westcott, Raby Castle, was third, *Black* *Hamburghs* and *Muscat of Alexandria* Grapes, *Barrington* Peaches, and *Beurré Joubert* Pears being his best examples. For four dishes, Pines excluded, Mr. R. Westcott was first with *Muscat of Alexandria* and *Black* *Hamburgh* Grapes (well finished), *Barrington* Peaches, and *Best of All* Melon. Mr. J. McIndoe second with *Alnwick* Seedling Grapes, *Scarlet* *Flesh* Melon, *Princess of Wales* Peach, and *Humboldt* Nectarine well shown. For six dishes of hardy fruit Mr. J. Short was first, *Jargonelle* Pears, *Victoria* Plums, and *Morello* Cherries being excellent.

Grapes were a grand display. For six bunches not less than three varieties, six competitors entered, Mr. J. Potter, gardener to Wm. Parkin Moore, Esq., Whitehall, Carlisle, being adjudged first. He had *Buckland's* Sweetwater, magnificently finished, and of a clear amber colour. *Gros Colman*, *Black Alicante*, and *Muscat of Alexandria*, averaging from 3 to 4 lbs. each. They were an even and admirable lot. Mr. J. Hunter, Lambton Castle, was placed second with *Canon Hall*, *Gros Guillaume*, and *Muscat of Alexandria* as his best, and Mr. J. Duncan, Water Priory, third with *Black Alicante*, *Lady Downes*, and *Muscat of Alexandria* in good condition. Mr. J. Witherspoon, Chester-le-Street, also showed in this class, but the Grapes were not considered by the Judges ripe enough to receive a prize. They were well grown large bunches, with good shaped berries. For two bunches of *Black* *Hamburgh* Mr. C. Portsmouth, gardener to the Hon. and Rev. F. R. Grey, Morpeth, was first with superior bunches from 3 to 4 lbs. each, well coloured and the berries large, Messrs. Luck and Cowperthwaite following. For *Black Alicante* Mr. Nicholas was deservedly placed first, Mr. Duncan second, and Mr. Bell third.

For two bunches of *Black* Grapes any other sort, Mr. J. Witherspoon was first with *Alnwick* Seedling, about 2½ to 3 lbs. weight, and well finished, Messrs. Bell and Nicholas following. Mr. J. Potter was first with *Muscat of Alexandria* in good condition, also with *Buckland* Sweetwater, magnificent clusters, well finished, and splendidly coloured, Messrs. Hunter and Cowperthwaite following with *Muscats*, and Mr. Witherspoon with *Buckland's* Sweetwater. White Grapes of any sort brought Mr. J. McIndoe to the front with *Duke of Buccleuch*, and he was first for the heaviest bunch of Grapes with *Gros Guillaume*, weighing about 6 lbs.

Ten Melons were staged, the first prize falling to Mr. J. Potter with *Blenheim* Orange. For Peaches Mr. J. McIndoe was first with *Belle-garde*, and also first for a dish of *Pitmaston* Orange Nectarines. Currants and Cherries were also shown very well indeed. For twelve dessert Apples Mr. J. McIndoe was first, and Mr. J. Hunter second, his Apples being much larger and more finely coloured than the winning lot. This and other judgments in the Apple classes gave good fruit growers much surprise. Mr. McIndoe was also first with cooking Apples, and Mr. J. Hunter second. Mr. J. Hunter was first with a fine lot of Pears, including *Beurré Diel*, *Duchesse d'Angoulême*, and *Belissime d'Hiver*. Eleven lots of Tomatoes were staged, Mr. D. T. Bull of *Alnwick* winning the first prize with large well-formed fruit.

In the B division, nurserymen excluded, £5 and the Veitch Memorial medal for six plants in bloom were won by Mr. John Morris, Parkgate, Felling, Allamanda Hendersoni, *Lapageria rosea*, *Dipladenia amabilis*, *Erica Marnockiana*, and *Bougainvillea glabra* being good. For *Ericas* Mr. E. H. Letts was first with *Turnbulli* and *superba*. Mr. J. McIntyre won with six exotic Ferns, showing *Gleichenia rupestris glaucescens*, *Adiantum cuneatum*, and *A. gracillimum*, and *Davallia bullata* admirably. *Fuchsias* were also shown remarkably in this class. For a basket of cut flowers Miss E. Armstrong was first, and for a bridal bouquet Mrs. Oliphant won with one not quite so large as was shown in the corresponding class, but well put together, with very good flowers, and Miss E. Armstrong followed up her former success by taking first prize with a hand bouquet. For *Asters* (*Globe*) and *Gladioli* Mr. A. G. Brown, Whitburn, was first with very good flowers. Messrs. W. Sanderson and W. Hutchison won with *Asters*, and Mr. T. Flowdy was first for *Zonal* *Pelargoniums* and *Picotees*; Mr. G. Dixon, sen., won with *Carnations*.

For Pansies, Show and Fancy, Mr. Geo. Davison and Mr. George C. Murray were the respective winners. For six bunches of stove and greenhouse cut flowers Mr. H. Johnston was first.

Great credit is due to the local florists and nurserymen for sending plants not for competition. Messrs. Wm. Fell & Co., Hexham, sent a very fine collection of *Coniferæ*, finely coloured and well grown, including *Retinospora plumosa*, 6 feet; *Retinospora plumosa aurea*, *Juniperus chinensis aurea*, *Retinospora variegata plumosa argentea*, *Abies Englemanni* and *gloriosa*, and *Osmanthus ilicifolia*; *Cupressus Frazeri*, and *Hydrangea paniculata*, which is quite hardy; also a very fine collection of herbaceous plants in bloom. Mr. W. R. Armstrong exhibited Palms, Ferns, Eulalias, Lycopods, and other useful decorative plants. Messrs. Little & Ballantyne, Carlisle, exhibited a fine lot of half-specimen Crotons, including Queen Victoria, Ruberrima, and others, also seedling Begonias with very large flowers. Messrs. Jos. Robson, Hexham, showed hardy and useful *Coniferæ* of choice varieties. Messrs. Harkness, Bedale, had a unique and choice collection of herbaceous flowers similar to those described before. Mr. J. W. Tate, Florist, Sax's Gardens, exhibited plants suitable for house decoration, and Mr. W. J. Watson, nurseryman, Newcastle, a basket Virginia Creeper, white variegated, called *Ampelopsis variegata*, which should contrast well with Veitch's. Messrs. Stuart & Mein, Kelso, had two stands of French Marigolds and some beautiful Asters. Messrs. Kent and Brydon, Darlington, also showed a mixed stand of cut flowers, consisting principally of herbaceous plants.

After the judging was over the Committee, Judges, and other gentlemen had luncheon in an adjoining tent. Mr. Alderman Hooper of York was present with a deputation from the York Gala. The new Chairman of Committee, Councillor Baxter Ellis, presided, and was supported by the Mayor of Newcastle, Sheriff, Professor Flower, President of the British Association, Canon Loyd, and Mr. Alderman Lucas, Mayor of Gateshead. It is to be hoped that the Committee may have better weather another year, and recoup their heavy loss of the last two years, for the zeal and energy displayed by the Committee are worthy of success.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Lifting Trees in Succession Houses.*—When the growth is too free, the crops not being satisfactory, the trees may be root-pruned or lifted as soon as the foliage shows indications of falling. If judiciously performed this will check their vigour and induce short-jointed fruitful wood. Any lifting or root pruning should be performed before the leaves fall, affording a good watering afterwards, mulching with a few inches thickness of short manure, and syringing the trees each evening for a few days. The trees will soon produce young active feeders.

Late Houses.—Trees of those very fine varieties, Princess of Wales, Barrington, Sea Eagle, Gladstone, Lady Palmerston, Walburton Admirable, the Nectarine Peach, and Comet, are now ripening; indeed, are ripe, the fruit being fully a fortnight to three weeks earlier than usual in the same houses and conditions as obtained in previous years—viz., been freely ventilated, kept as cool as possible through the hot weather by those means, well watered at the roots through a good surface mulching, and the foliage kept clean and healthy by forcible syringings. The trees must now have the benefit of a free circulation of air, utilising sun heat by keeping the ventilators closer than usual, or with ventilation in the early part of the day the temperature may be allowed to run up to 80° or 82°, which will do more to ripen the fruit and wood than sharp firing in dull weather. A somewhat drier condition at the roots is desirable when the fruit is ripening, but they must not be allowed to suffer for want of it so as to affect the foliage, and though the trees are not to be syringed an occasional damping will greatly tend to improve the health of the foliage. In dull wet weather a gentle heat in the pipes will be serviceable in securing the temperature essential to finishing the fruit and allowing a circulation of air.

Unheated Houses.—Induce ripening by a somewhat dry atmosphere. Make the most of sun heat by allowing a considerable advance under its influence, closing early, but providing a little top ventilation before night. Keep the wood thin, cutting away any gross growth, and shorten any safty shoots to 12 or 15 inches, and keep all laterals closely pinched to one joint.

CUCUMBERS.—Keep young plants well up to the glass to insure a sturdy growth, and pinch out the growing point at the second leaf if the plants are to be trained with more than one stem. It is important whether the plant are to have one or more stems that the laterals up to the trellis be rubbed off as soon as discernible, leaving the leaves, when they may be allowed to make side shoots for bearing. Continue the preparation of fermenting material where such is employed for bottom heat. Manure will require to be turned over about every three or four days, while tan need only be turned once, and that as soon as it is fairly

warmed through. In forming the beds whatever material is employed tread it well down. Give a light syringing only in the early part of the afternoon on bright days, but moderate moisture must be secured by sprinkling in the morning every available surface, and damping before nightfall. Maintain the temperature at 70° to 75° by artificial means, falling 5° through the night, and allowing an advance to 80° or 85° to 90° from sun heat, closing at 80°.

In pits and frames the temperature must be maintained by renovating the linings as necessary, and employing night coverings. Water very carefully, and sprinkle the foliage only on bright days. Keep the foliage thin, removing bad leaves and exhausted growths, and husband the sun heat as much as possible by early closing.

MELONS.—The latest plants are now well up the trellis, having been stopped when they extended two-thirds across. We grow all our Melons in houses on the single cordon system—i.e., the plants have all the laterals rubbed off up to the height of the trellis, and then every alternate one on opposite sides of the primary, stopping it when two-thirds across the trellis. The laterals show fruit blossoms at the second or third joint; if not, the laterals are pinched at the second joint, relying on the sub-laterals for the show of fruit. If the plants are weak and there is no hurry for the fruit remove all staminate and pistillate flowers on the laterals, stopping at the second or third joint waiting for fruit on the second or sub-laterals, which is an advisable plan where time is not a consideration, and a full crop and large fruit is required. We generally contrive to have both methods in the same house, which gives a longer succession of fruit—viz., plants allowed to fruit on the first laterals; those give two to four fruits per plant, and those that fruit on the second or sub-laterals four to six fruits each, the latter being a fortnight to three weeks later. As we have to maintain a succession daily from May to November inclusive the plan is an excellent one. A rather dry condition of the atmosphere with a little ventilation so as to insure a circulation of air is advisable, with a bottom heat of 80° to 85°, and impregnating the blossoms after they become fully expanded is advantageous to a good set. Do not earth up the roots until after the fruits are set and swelling. Fire heat will be necessary to maintain a temperature of 70° to 75° by day artificially, rising to 80° to 85° from sun heat, losing no opportunity of closing early, so as to run up to 90° or 95°. Be sparing of the syringe, only use it for damping in the morning and afternoon, syringing the foliage only on bright days and in the early part of the afternoon. Water at the roots only when necessary, using liquid manure to assist in swelling the crop, giving a thorough soaking when needed. Sprinkle all available surfaces with liquid manure, as we find this highly beneficial to the foliage, but a better plan is to sprinkle the surface of the border with a few fresh horse droppings about twice a week, and a little soot. We go a little further—viz., give each plant a handful of dissolved bone (superphosphate of lime), but we use no manure in the soil, except some lime rubbish and charcoal refuse, if they can be termed manures.

Considerable attention is necessary with plants swelling their fruits in guarding against canker and to prevent the fruit cracking. Fresh slaked lime applied on the first appearance of canker will subdue it, repeating it as necessary. A lessened supply of water both at the roots and in the atmosphere, particularly the latter, is the proper remedy for cracked fruits, or cutting the shoot half way through a few joints below the fruit in the case of very vigorous plants. Fruit ripening should have a little air constantly, with a temperature of 70° to 75°, and as much more as can be had from sun heat under 100°, with a corresponding increase of ventilation, but the fruit as soon as there is the least indication of the footstalk parting from it, even earlier than that if the fruit is expected to keep, and place it in a light and moderately airy fruit room. They will have more flavour and be more mellow than fruit allowed to bake on shelves in the sun.

Wet the foliage of plants in pits and frames as little as possible, and water only at the roots to prevent flagging. Renew or renovate the linings to finish off the crop directly the heat is found to be on the wane, and employ a covering on cold nights. In dull damp weather, and especially at night, leave a little ventilation. A little tilting of the lights at the back will allow the pent up moisture to escape, it will improve the quality of the fruit, and may prevent its cracking. Keep the foliage thin and the fruit well raised to the light.

KITCHEN GARDEN.

LIFTING AND STORING MIDSEASON POTATOES.—Many of the main crop or midseason Potatoes are now ripe, and advantage should be taken of good weather to lift and store them. Our plan is to dig up a good quantity on the morning of a fine day, and after being exposed for a few hours all that are to be stored for use are placed under cover, where they may remain for a day or two until quite dry, when they are either put in a dark shed or into clamps in the open, the object throughout being to prevent them becoming green. The seed tubers are next gathered, and are medium sized. These are not kept from the light, but great care is taken that they are well formed and free from disease.

OPEN AIR TOMATOES.—The wet, dull weather experienced near the end of August checked the development of these for a time, but of late they have been improving, and by exposing the whole of the fruit as much as possible to the sun they will make much progress. As very small fruit at the points of the shoots will not ripen, these should be cut back to the larger fruits, at the same time the foliage should be freely removed. Should the weather be unfavourable and any spare frame lights are disengaged, place these over the Tomatoes on the walls, and ripe fruit may be produced where it would otherwise remain green.

Liquid manure made from guano is the best stimulant that Tomatoes can have on and after this time.

AUTUMN SOWN CAULIFLOWER.—Some approve of sowing early kinds of Cauliflowers in the autumn for producing the first crop in spring, and in all such cases the seed should be sown at once. It is better to have small than large plants to winter, as the latter are liable to "button" in spring. A frame in a sunny part of the garden with good soil in it up to about 9 inches from the top is suitable for raising the plants. Sow the seed thinly, cover an inch or two deep, make the surface firm, but do not place on the lights until severe weather compels this, as the hardier and more dwarf the plants can be kept in early winter the better do they withstand severe frost. If the seed is sown thickly the plants may soon become crowded if not thinned when in a small state. A two-light frame of good plants are as many as are required for the majority of gardens.

LIME IN THE KITCHEN GARDEN.—As our vegetable quarters became vacant last autumn we give them a good dressing of lime, and the crops of all kinds that have been produced since have been the most luxuriant and remunerative we have secured for many years. Like many others our ground has been over-dressed with leaf soil and vegetable refuse, and the lime is beneficial in all such cases.

MUSHROOMS.—Since the end of June we have been gathering abundance in the fields, but attention must now be given to artificial beds. The manure should not be allowed to dry too much, as it retains the heat much better and longer when moderately moist. We have just spawned a large bed that will produce plenty of Mushrooms from the beginning of November until after Christmas, and by that time others will be bearing. Spawn is inserted when the heat is at 85°, and sometimes 90°. This causes it to run freely, and the result is a more even crop than when spawned at 75°, the Mushrooms then coming up in clusters. We mix turfy soil with the manure, as we note that some of our finest clusters spring from the pieces of turf; also spread a little hay over the beds to prevent them from becoming too dry, as if this occurs it is difficult to make it quite moist again.

DEAD LEAVES ON WINTER GREENS.—There are many dead leaves on the winter greens, such as Brussels Sprouts and Savoys, and as these prevent the air and sun hardening the stems for winter they should be cleared off, and the plants will show the benefit of it when they have to pass through any severe weather.

MATURED CAULIFLOWERS.—These are plentiful at present. Veitch's Autumn Giant is most serviceable, and all who value autumn Cauliflowers grow it. When the supply of heads exceeds the demand they may be cut off before they have become too old for use with about 10 inches of stem attached, then inserted in damp leaf soil or sand in a partially dark but airy place. Under these conditions they will remain firm and good for three weeks.

PLANT HOUSES.

Hyacinths.—Bulbs should be potted at intervals of three weeks until the end of October when required for decoration over as long a period as possible. Homerus (single red) will be found the most suitable for very early flowering. The spike is not large or crowded with bells, and consequently opens better than any other variety under early forcing. The colour of the flower at first is bright, but it quickly fades, which is its only fault. For early work, however, it cannot well be dispensed with. La Tour d'Auvergne, double white, is perhaps the earliest of all Dutch varieties, and will precede Homerus by a few days. The pure white double bells of this variety will be invaluable for all who have bouquets, buttonholes, and sprays to make; the bells when wired are very suitable for this purpose. Charles Dickens is the earliest of the single blooms, but it is fully ten days later than those named—in fact, several single varieties of various shades of colour will flower about the same time as Charles Dickens. For ordinary decoration the following are amongst the most useful:—Single white: Alba Maxima, Madame Vander Hoop, Alba superbissima, Grandeur à Merveille, Baroness Tuyll, and Grand Vedette. Single blues: Baroness Tuyll, Grand Lilas, Argus, Marie, Uncle Tom, and Charles Dickens. Single red: Robert Steiger, Gertrude, Norma, Amy, Gigantea, and Madame Hodson. Yellow: Ida. Doubles—red: Lord Wellington and Waterloo. Blue: Blocksberg and Laurens Koster. No better white than the one named can be selected, and if potted at different times will be found useful throughout the season. In potting single bulbs may be placed in 4½-inch pots, and three in 6-inch. One good crock only will be necessary for drainage, with a little of the roughest of the compost over it. The top of the bulb should just be visible when potting is completed. The soil should be pressed only moderately firm. The soil may consist of equal quantities of good loam that has been stacked some months, with about one-seventh of manure added at the time of stacking, and old soil from the potting shed, with the addition of about one-fourth leaf mould. A little coarse sand may be necessary, but this depends upon the texture of the loam. Carefully avoid the use of manure in a fresh state.

Tulips.—Place these in pots and boxes in quantity, according to the demand. For early flowering it is best to have Tulips thickly in boxes or pans, and then lift, and repot them when they come into flower. Early in the season Tulips flower very irregular, and it is difficult to have good pots without they are made up. Early in the year there is no perceptible difference in the lasting properties of the flowers, whether grown in the pots or lifted and placed thickly into them. For early work Duc Van Thol is the most useful, the scarlet form only being worth the trouble of boxing. The best of all whites and the earliest is Pottebakker. The flowers are large, sweet, and of the purest white. Early in the season, before being fully expanded, the flowers are almost

as valuable for wreaths and bouquets as the buds of Niphetos Rose, which they much resemble. Chrysolora is the earliest of the yellows. For later flowering they are placed five or six, according to their size, in 5 and 6-inch pots. Other useful varieties for succession are Vermillon Brilliant (the finest of all scarlet varieties), Canary Bird, Cottage Maid, Joost Van Vondel, Keizers Kroon, and Wouwerman (a good late variety). Amongst doubles procure Tournesol, scarlet and yellow and the yellow form; La Candeur, white; Rex Rubrorum, scarlet; two of the best late varieties. These may be had until June by potting late in October, and keeping them in a northern position afterwards. Both are good for cutting, and may be sent any distance during the month of May.

Polyanthus Narcissi.—For early flowering Paper-white and Double Roman should be grown five or six bulbs in 6-inch pots, the size we have found most suitable for these bulbs. Gloriosus and States General are two cheap and very early kinds. To these may be added Grand Monarque, Grand Soleil d'Or, and Newton. If the last of Grand Monarque are potted the last week in October and kept outside they will be found useful in the conservatory when all spring-flowering bulbs are over, or for cutting with the double late Tulips that have been named.

Scilla siberica.—Where these are appreciated in pots place the bulbs thickly together in 4½-inch pots at once. Cover the bulbs with 1 inch of soil, and plunge them the same as advised for Hyacinths and Tulips.



NOTES ON BEES.

BEES THROWN OUT OF A HIVE.

SAMPLES of bees have been received from "F. H. M.," who wishes to know the cause of so many bees being thrown out of a hive at this time of year. It is difficult to determine the cause without seeing the hive or hearing full particulars respecting the situation and surroundings. Some of the bees on dissection contain a milky-looking liquid, and have an odour not unlike "pot ale," the refuse from a distillery. Are the bees near one, or have they access to dregs of ale or porter? They do not seem diseased in the proper sense of the term. They are not all alike. Some of them are young bees, and it is a common occurrence at this season for stocks to draw much of their brood unless prevented by liberal feeding, which is in some cases neither prudent nor advisable to do. We shall be glad to hear full particulars.

BEES SWARMING.

The cause of this is hardly worth consideration, as the subject has so often been explained in these pages. But it appears some bee-keepers do not thoroughly understand it. Therefore a few words of explanation, if they should be a repetition, may not be out of place. Some bee-keepers, one in particular, writes, "Keep the variety that is not inclined to swarm!" I have yet to see this wonderful variety of bee. Others write of certain ways and means of preventing swarming, which is simply the original methods, and not "a new system." I observe some American writers affirm the cause of swarming to be an excess of "indoors" or young bees, and run into the same old error that many have done before, of fixing the life of the honey bee at as many days as it should have been weeks. Another plan is that of "Felix," which I am ignorant of as yet, but await patiently the instructions how to prevent swarming by "skilful management." My own opinion in the interim will neither interfere with his information nor disturb him in the least, and for the benefit of bee-keepers I will explain the causes of swarming, and how in certain cases it can be prevented; but without such manipulations as I describe it would be impossible.

SWARMING FROM SMALL HIVES.

It is a well known fact that bees in small hives will increase by swarming naturally, much more quickly than where full sized hives are kept, but the latter are not exempt. In our early bee life, when using hives larger than those generally recommended, but smaller than we now use, it was customary to have ekes, or at times a super, to prevent swarming. I soon discovered that this, in addition to having an excess of drone comb built, was not a successful method, especially where a queen of more than one year old

existed. Had I been plodding on in the old rut with straw hives, or even wooden boxes with solid crowns, I could not have improved the condition of things, but using then divisional hives, much like those I now use, I prevented drone comb being built in excess by preserving the barred boxes full of comb from the previous year to eke with, thereby getting stronger hives with less drone comb. In a year or two after I hit upon my frame hive contemporaneously with continental bee-keepers without having the slightest knowledge of what they were doing. This led me on to have a better knowledge of the cause and effect of certain things in connection with the honey bee. I saw at once that a young and fertile queen did not influence the bees to swarm as in the cases where an aged one was regnant, unless when the bees became crowded in a too small hive, but I also saw that in cases, whether the queen was young or old, if the hive was extra large with a teeming population that hive had an inclination to swarm. Then if the weather was warm and favourable for bees to work and gather much pollen and a little honey, swarming was more certain than when honey was abundantly carried into the hive, the bees evidently more bent on filling up every available space with honey than on the increase of the colony; hence the queen, naturally desiring rest, was left undisturbed, and the weather breaking after the honey glut the bees became contented and swarming for the time ceased. Owing to this perhaps almost, if not wholly, exhausted queen, a fugitive swarm in spring was almost sure to issue, leaving nothing but combs behind, or an untimely one further on, leaving behind it combs but sparsely filled with brood. I have dissected many queens of the so-called "hungry swarms," and not one of them had spermatheca to fertilise any great number of eggs, while some of them were completely exhausted as well as the ovaries. I predicted last autumn that there would in all probability be much disappointment this summer from the above causes owing to so few young queens having mated, causing old ones to be kept, and it has turned out as I warned.

Even lately some bee-keepers were bent on keeping queens that have done well the past summer, but after I remonstrated with them on the folly of doing so imported queens were obtained, and the old queens sent me for examination. All of them were exhausted, which not only showed on dissection, but the combs after heavy feeding did not contain a single egg.

The foregoing shows plainly how swarming is brought about in ordinary bee-keeping. If a queen is seeking for repose or exhausted at a time the bees are actively at work, whether there is plenty of empty combs or not, royal cells are brought forward in greater or less numbers, which has something to do with the number of after swarms that will issue, depending on the breed in this respect only, but has nothing whatever to do with the issuing of the prime swarm. It is safe to say that the conditions required to bring about swarming are almost identical, whether the hive be large or small, unless in the case of a very fertile queen, when an eke has been given.

HOW TO PREVENT IT.

There is but one way, and that is to keep the hive in a normal state for working. Overhaul the combs at a suspected time, and note the appearance and attitude of the queen, and of the bees towards her, as well as that of the number of eggs laid, for it is well to state that shortly before the exhaustion of a queen she lays an extra number of eggs. If no royal cells are being raised the hive may be allowed to go on for a few days longer, but in most cases after a queen has laid greatly for nearly a year she should be marked as suspected. Before attempting to depose a seemingly fertile queen have in readiness a fertilised one to take her place. Take every precaution necessary for her welfare, cageing her at least twenty-four hours amongst or over the bees after the colony show signs that they miss their previous one, with a further examination to find if queen cells are being brought forward before letting her free. The young queen on being set free amongst the fraternised bees will shortly begin to lay, and that greater than at

any time during her whole after-life. It is therefore absolutely necessary to give full scope to her laying powers by the introduction of empty combs in lieu of full honey ones, or an additional breeding box. The daily hatching of many young bees will give her full scope, and there will be no inclination of the bees to swarm again from four to six weeks after, which by that time in many cases will not take place. The above is the only method by which swarming can be prevented.—A LANARKSHIRE BEE-KEEPER.

BEEES IN STRAW SKEPS—TAKING HONEY.

I BOUGHT a swarm of bees this spring. They have swarmed twice, first about middle of June, second about fortnight later; they are all in straw skeps. I intend taking the honey from the parent hive. Could you inform me the best time for such operations, also how to get the bees into another hive, and what kind would you recommend? Which is the best manner to feed bees in skeps, and what is the best mixture? How would you manage to get the honey from the combs in a clean state?—A NOVICE.

[The best time to take the honey from straw skeps is in three weeks after the first swarm issues, because at that time, as a rule, little brood is in the combs, but even now there will be comparatively little. The bees require to be driven by the usual method, and then they can be re-run into whichever hive you choose, or the bees may be shaken on to a cloth and the hive placed directly over them, avoiding crushing any by placing two sticks beneath the hive.

The best hive for every purpose is the Lanarkshire storifying hive, or if honey is not for sale the Stewarton. Any novice can make the former, and the latter can be had from Messrs. G. Neighbour & Sons, 149, Regent Street, London. The mode of making the first named was fully described in previous numbers of this Journal. It will be necessary to have the frames fitted with foundation. A tin fountain with a wooden float (thin) is the best feeder for straw hives, but in case the bees do not clean out the syrup thoroughly remove it every morning. May be had from some dealer. The best feed is the best sugar to its equal weight in water dissolved over a slow fire, stirring the while till dissolved, boiling about one minute.

To take the honey from combs in a clean state where it is much thickened nothing equals the Lanarkshire honey presser. Select the combs to be pressed, setting aside the portions containing pollen, then cut into strips size of perforated cylinder, ram down, and when full put under the screw. The portions containing pollen should be laid on their flat and pressed gently. After the honey is pressed it is necessary to strain through muslin. My strainers are a series of sieves, the last being a tapered and pointed muslin net bag depending on the kind of honey. The so called "Rait presser" originated from this one, but is not adapted for taking large quantities of honey. Moreover, the hands are always soiled with honey, whereas with the Lanarkshire one no such thing occurs. As you will also be wishing to extract the wax no better instrument can be had for this purpose than the Lanarkshire presser. A wide cylinder of perforated tin lined with cheesecloth is all that is necessary. Put the wax into a large melting pot, melt, but not to boil the combs, then ladle the wax into the cheesecloth (bag or loose), close the opening and press. With such an instrument several combs of wax could be melted daily, and not a speck of wax out of place.—A LANARKSHIRE BEE-KEEPER.]



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (W. S.).—You have inadvertently omitted your name and address, which we shall be glad to be favoured with; not for publication.

Grapes (J. C. and Cambrian).—Letters arriving on Wednesday morning cannot be satisfactorily answered in the current issue, which is then far advanced for the press.

Wasp-killing Mixture (R. R.).—Possibly there may have been more than one preparation advertised, and we cannot tell to what you particularly refer. Messrs. Barelay & Sons, Farringdon Street, have advertised a preparation called "Death to Wasps." If that is what you mean, we think it can be obtained through chemists.

Caterpillars and Fruit Trees (P. M.).—For the purpose of preventing the wingless female winter moths (cheimatobia) ascending the stems of trees, stout paper is tied round them, and this is thickly smeared with equal parts of Stockholm tar and cart grease. Some persons apply it to the bark, but we do not recommend the plan. Miss Ormerod suggests that haybands mixed in tar and oil, then laid round the stems of the trees, not quite touching them, might answer. Mr. S. T. Wright, Glewston Court, where fruit trees are extensively and admirably grown, did not find the glutinous barriers effectual, but we do not know at what period of the year he provided them. The moths emerge towards the end of October, and continue ascending the trees at night for several weeks.

Contents of Fruit Sieves (A. J. N.).—Market measures vary in different districts. We presume you desire to know the nature of those in Covent Garden. They are as follow:—A half sieve contains 3½ imperial gallons. It averages 12½ inches in diameter and 6 inches in depth. A sieve contains 7 imperial gallons. Diameter 15 inches, depth 8 inches. A sieve of Peas is equal to 1 bushel; a sieve of Currants 20 quarts. A bushel sieve contains 10½ imperial gallons. Diameter at top 17½ inches, at bottom 17 inches; depth 11½ inches. A bushel basket ought, when heaped, to contain an imperial bushel. Diameter at bottom 10 inches, at top 14½ inches; depth 17 inches. Walnuts, Nuts, Apples, and Potatoes are sold by this measure. A bushel of the last-named cleansed weighs 56 lbs., but 4 lbs. additional are allowed if they are not washed. A junk contains two-thirds of a bushel.

Pruning Vines (Triceps).—We should not like to grow a Vine for fourteen or fifteen years without fruiting, but as yours produced fruit for the first time last year there appears a disposition to improve. We suspect the Vine is in an enfeebled state, and copious supplies of liquid manure might be of great service. If the Vine is well supported at the roots it will push good growths after the rod is cut back as you propose, and if these are trained 18 inches apart grow strongly, reach the top of the house, and ripen well, they will bear much better Grapes than can be had from weak closely spurred laterals. If you had sent us a sample of the young wood we should be in a better position to advise you on the subject. Assuming you remove the rod, we should cut back the laterals to the best buds where the wood is firm, regardless of their distance from the main rods from which the laterals proceed. Some soil dug from the roots, adding fresh with wood ashes, surfacing with rich manure might induce the production of fresh roots for imbibing nutriment in the form of liquid manure.

Transplanting Ferns (N. J.).—There is no better time for transplanting Ferns than just as young fronds show signs of uncurling in the spring. The ground should be well broken up some time previously, as they will not thrive on a hard dry subsoil, and vegetable matter, such as may be gathered in plantations, should be liberally mixed in the soil. The common Bracken is one of the worst to transplant, because compact, well-rooted clumps, are the worst to secure. You must therefore exercise care in selection. Dig the roots up in large squares, plant firmly, water well, and mulch thickly with decayed leaves to prevent the escape of moisture from the soil. The plots you desire to establish in the park should be protected from cattle, for though the animals may not eat the fronds, they would be certain to trample on the ground, and in that way render your work futile. During some seasons the growth of transplanted Brake Ferns is much better than in others, and if you fail in the first attempt, try again. We have seen many failures and not a few successes in transplanting this Fern.

Quick-growing Wall Plant (J. M.).—To your query, "What is the most effectual plant for covering the walls of a large stone house with green stuff in the shortest possible time?" our reply is, We do not remember any plant more likely to answer than the Virginian Creeper, *Ampelopsis hederacea*, but it rarely affords "green stuff" during the summer. The rapidity of its growth also depends on the character of the soil; the better and deeper this is, the sooner are walls covered. We know a brick wall facing the south that is now covered to a height of 15 feet with growths of the present year, and we inserted cuttings from a plant in July, the growths from these being now 6 feet high. This particular form clings fairly well to brick walls, but might not do so on a rough stone surface, but would probably require the support of nails and shreds. The small clinging *A. Veitchii* will adhere to any wall, and produces a more pleasing surface of "green stuff" than the other, but not quite so quickly. If you require an evergreen, plant a strong growing Ivy in rich soil, mulch with manure, and give water as is required in the summer. If any of our readers can suggest plants more likely to answer your requirements they are quite at liberty to do so.

Celery Fly—Tomatoes (W. E. B.).—The Celery leaves contain small maggots, which hatch from the eggs which a small fly (*Tephritis*) deposits in them, puncturing the surface for the purpose. When the maggots are numerous they eat out the substance of the leaves and often ruin the crops. When the first blister is seen gardeners dust the plants with soot frequently, and this deters the flies from visiting them,

but soot will not destroy the maggots in the leaves. You had better pick off all the blistered parts and burn or bury them deeply, then dust with soot. Some gardeners save their crops by syringing the plants with petroleum, such as is burned in lamps, adding a small wineglassful or less to a gallon of water and mixing by violent agitation, which is continued during the time of application in the form of spray through a syringe. If the agitation is incomplete the oil floats on the water. The mixture should only be applied in the evening, as if the sun shines brightly on the leaves before the oil evaporates they are apt to be scorched. Well mixed and rightly used, we have known Celery kept clear of the enemy, and the maggots destroyed in the leaves. The nozzle of the syringe cannot be too finely perforated for the application. Try the effect of the mixture, applying it as best you can on half a dozen plants before using it extensively. The crimson Tomato you send is Dedham Favourite. It was distributed by Messrs. Carter & Co., and is a favourite with many persons besides yourself. The scars on the fruits of the other variety are not infrequent, and are the result of the adherence and decay of the stamens.

Tuberose Culture (J. S.).—The following simple method has been described by a very successful cultivator. Procure sound well-ripened bulbs as soon as you see them advertised. If in quantity divide them into two or three batches for succession. Pot the first at once, either three bulbs in a 32-sized pot, or one good bulb in a 48-pot. In either case use a rich loamy soil, or if the loam is poor add one-third of well-decayed manure that will pass through a quarter-inch sieve, and a little sand. Pot rather firmly, afterwards place them in a cold frame, or under the stage of a greenhouse where there is little or no drip from plants above, and cover them with cocoa-nut fibre refuse, fine coal ashes, or some other material that will run between the pots. This will keep the soil sufficiently moist for rooting to commence, which will begin in a fortnight. As they advance take them out, and for a few days place them in a position where they at first have but a moderate light, such as under the stage of a plant house. It will be seen that the young growth will gradually assume a natural colour, when the plants may have the full light and heat of an intermediate house. A stove heat is more than they need, and to have them in flower quickly a cool greenhouse is not sufficient. After making a little foliage the flower spikes begin to appear, and as they grow to from 2 to 4 feet in height and are very slender, a stake must be placed to each. Each spike if good will produce two dozen blooms in succession, pure white with a most delicious fragrance. When in bloom they are conspicuous if placed in the conservatory with the spike of flowers arising just above other plants, but they would be principally required for cutting. The perfume is strong, therefore for room or any part of house decoration too many must not be employed at one time. During growth the plants are subject to the attacks of green and black aphides, which infest the spikes of flowers. Liquid manure given twice a week will be found to benefit the plants, and by potting in succession they may be had in flower during the greatest part of the year. They are among the most useful for cutting for bouquets, wreaths, and buttonholes, as they are sweet-scented, pretty, and last a long time.

Diseased Tomatoes (S. D. C.).—The disease with which the examples sent are so seriously infested is, if not identical with, substantially the same as the Potato disease. It is caused by a fungus (*Peronospora*), and is induced by succulent growth caused by errors in watering and ventilation. When these errors occur in unheated houses the attack is often virulent, as in your case, and most difficult, if not impossible, to check. A high temperature and dry breezy atmosphere should be maintained on the first appearance of the disease. All such fruits and leaves as you have sent should be cut off and burned, the house kept as dry as possible, the more slightly affected parts well sulphured. A solution of sulphate of iron (green vitriol) is said to be an enemy of the disease, but it must be used experimentally, trying its effects on a plant or two at the rate of an ounce to 20 gallons of water, increasing or reducing the strength according to the results of the application. The leaves before us are much too soft and destitute of tissue, hence in a condition peculiarly liable to injury and by fungoid attacks. Mr. Iggulden in his useful work on Tomatoes has the following remarks on the *Peronospora* attacking the plants:—"Under glass, and especially in well-heated houses, it is possible to either prevent an outbreak of the Potato disease, or, at any rate, to materially check its progress. After repeated trials and close observation I have arrived at the conclusion that many failures are due to haphazard ventilation. A moist atmosphere is most favourable to the outbreak and spread of the disease, and it is my belief the spores are generally admitted through the front lights. In windy, sunless, rainy weather these ought, therefore, to be kept nearly or quite closed, the top lights being opened, and if possible sufficient fire heat afforded to maintain a buoyant atmosphere. Nor should a current of moist and, it may be, disease-laden air be allowed to pass through pits and frames when these are planted with Tomatoes. In clear warm weather the lights may either be drawn off or blocked up in the centre, but when disease is in the air the lights ought to be pushed down from the back only. Every affected leaf or a portion of a leaf should be removed directly it is observed and burnt, and occasionally it may be necessary to cut a portion of the stem clean out." You say you have only watered the plants "moderately" and "given plenty of ventilation." It is possible, as you will perceive by the above citation, to admit air too freely under certain atmospheric conditions; and your idea of "moderate" supplies may differ from ours. For instance, if you have given a little water daily or even thrice a week, keeping the

surface of the soil damp, and consequently the atmosphere, moderation in quantity given in that manner would be much more likely to bring about the disease than thrice the aggregate quantity of water given once a fortnight. We know by the state of the leaves that there has been too much moisture in the air, if not in the soil. You do not say whether the plants are planted out or not; if they are we should not allow a drop of water in the house for at least three weeks, no matter how dry the weather may be.

Double Sunflowers (*W. B. H.*).—The flowers sent in green grass have arrived as fresh as when cut from the plants.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. W.*).—1, *Rudbeckia hirta*; 2, *Campanula Trachelium*; 3, *Echinops ruthenicus*; 4, *Aster laevis*. (*W.*).—1, *Cassia corymbosa*; 2, *Polygonum cuspidatum*. (*Hugh, Paris*).—1, *Begonia semperflorens*; 2, *Adiantum pubescens*; 3, *Panicum variegatum*; 4, *Gymnogramma chrysophylla*; 5, *Spiraea aruncus variegata*.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*R. C. A.*).—The Plum you have as *Victoria* is probably Autumn Compôte. The red Apple is a good specimen of the Worcester Pearmain, the other is the Burr Knot. We shall be glad to hear what you have to say about it and its culture in your district. The other Plum was smashed between the Apples, and the juice rendered the writing accompanying it quite unreadable. (*T. W.*).—1, Yorkshire Greening; 2, Bess Pool; 3, Domino; 4, Trumpington; 5, Caroline; 6, Summer Crasanne. (*J. Drew*).—Not known in their unripe state. (*G. R. J.*).—1, Northern Greening; 2, Lady Apple; 3, not known; 4, Greenup's Pippin; 5, Duchess of Oldenburg; 6, Cellini. (*John Warner*).—Orleans. (*H. W.*).—1, Devonshire Quarrenden; 2, not known; 3, Red Winter Calville; 4, Hoary Morning; 5, Blenheim Pippin; 6, Wormsley Pippin.

TRADE CATALOGUE RECEIVED.

W. Drummond & Sons, 58, Dawson Street, Dublin.—*Catalogue of Dutch Flower Roots.*

Hooper & Co., Covent Garden and Maida Vale.—*Bulb Catalogue for 1889.*

Dammann & Co., Naples.—*Catalogue of Plants and Seeds.*

Wm. Rumsey, Waltham Cross.—*Catalogue of Roses.*

Jarman & Co., Chard, Somersetshire.—*List of Bulbs.*

Daniels Bros., Royal Seed Establishment, Norwich.—*Illustrated Catalogue of Dutch Flower Roots, Autumn 1889.*

T. Smith, Newry.—*List of New and Scarce Hardy Plants.*

Ant. Roozen & Son, Overveen, Haarlem & Veerhout.—*Catalogue of choice Dutch, and Cape Bulbs, 1889.*

Richard Barker & Co., Frampton, Boston, Lincolnshire.—*Catalogue of Narcissi and other Bulbs.*

COVENT GARDEN MARKET.—SEPTEMBER 18TH.

No alteration. Market very quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve ..	2	0 to 4	Oranges, per 100 ..	4	0 to 9
" Nova Scotia and ..	0	0	Peaches, dozen ..	2	0
" Canada, per barrel ..	0	0	Plums, ½ sieve ..	3	0
Cherries, ½ sieve ..	0	0	Red Currants, per ½ sieve ..	0	0
Grapes, per lb. ..	0	6	Black " ..	0	0
Lemons, case ..	10	0	St. Michael Pines, each ..	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	2	0 to 3	Lettuce, dozen ..	0	9 to 1
Asparagus, bundle ..	0	0	Mushrooms, punnet ..	0	6
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet ..	0	2
Beet, Red, dozen ..	1	0	Onions, bundle ..	3	0
Broccoli, bundle ..	0	0	Parsley, dozen bunches ..	2	0
Brussels Sprouts, ½ sieve ..	0	0	Parsnips, dozen ..	1	0
Cabbage, dozen ..	1	6	Potatoes, per cwt. ..	4	0
Caulicums, per 100 ..	0	0	" Kidney, per cwt. ..	4	0
Carrots, bunch ..	0	4	Rhubarb, bundle ..	0	3
Cauliflowers, dozen ..	2	0	Salsify, bundle ..	1	0
Celery, bundle ..	1	3	Scorzonera, bundle ..	1	6
Coleworts, doz. bunches ..	2	0	Shallots, per lb. ..	0	3
Onion, each ..	0	3	Spinach, bushel ..	3	0
Endive, dozen ..	1	0	Tomatoes, per lb. ..	0	4
Herbs, bunch ..	0	2	Turnips, bunch ..	0	4
Leeks, bunch ..	0	3			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2	0 to 4	Lilium longiflorum, 12 ..	2	0 to 5
Asters, per bunch, French ..	0	3	blooms ..	2	0 to 5
" doz. n. English ..	3	0	Maidenhair Fern, doz. ..	4	0
Bouvardias, bunch ..	0	6	bunches ..	4	0
Carnations, 12 blooms ..	1	0	Marguerites, 12 bunches ..	2	0
" 12 bunches ..	3	0	Mignonette, 12 bunches ..	1	0
Chrysanthemums, dozen ..	1	0	Myosotis or Forget-me-nots ..	1	6
blooms ..	1	0	doz. bunches ..	1	6
Chrysanthemums, dozen ..	2	0	Pansies, dozen bunches ..	1	0
bunches ..	2	0	Pelargoniums, 12 trusses ..	0	6
Clove Carnations, 12 bunches ..	0	0	" scarlet, 12 bunches ..	2	0
Cornflower, doz. bunches ..	1	0	Pinks (various) 12 bunches ..	0	0
Dahlias, dozen bunches ..	2	0	Poppies, various, 12 bunches ..	2	0
Eucharis, dozen ..	2	0	Roses (indoor), dozen ..	0	6
Gaillardia picta, 12 bunches ..	2	0	" Mixed, doz. bunches ..	3	0
Gardenias, 12 blooms ..	2	0	" Red, dozen bunches ..	4	0
Glad oil, per bunch ..	0	6	" 12 blooms ..	0	6
Glaucolus hrencheyensis, ..	0	6	" Tea, white, dozen ..	1	0
dozen sprays ..	1	0	" Yellow ..	2	0
Helianthus, or Sunflower, ..	3	0	Solifera, dozen bunches ..	0	0
dozen bunches ..	3	0	Stephanotis, doz. sprays ..	2	0
" large, dozen bunches ..	0	6	Stocks, dozen bunches ..	3	0
Lapageria, 12 blooms ..	1	0	Sweet Peas, doz. bunches ..	2	0
Lavender, dozen bunches ..	4	0	Sweet Sul an, ..	3	0
Lilium auratum, 12 blooms ..	2	0	Taberones, 12 blooms ..	0	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen ..	3	0 to 9
Arum Lilies, per dozen ..	0	0	Geraniums, Ivy, doz. ..	3	0
Arbutus (golden), dozen ..	6	0	Hydrangea, per dozen ..	9	0
Asters, 12 pots ..	3	0	Lobelia, per dozen ..	0	0
Begonias, various, per doz. ..	4	0	Marguerite Daisy, dozen ..	6	0
Balsams, per dozen ..	3	0	Mignonette, per dozen ..	3	0
Caladiums, per doz. ..	0	0	Musk, per dozen ..	0	0
Calceolarias, per dozen ..	0	0	Myrtles, dozen ..	6	0
Christmas Rose ..	0	0	Nasturtium, per dozen ..	0	0
Chrysanthemums, dozen ..	6	0	Palms, in var., each ..	2	0
Cockscombs, per dozen ..	3	0	Pelargoniums, scarlet, 12 ..	3	0
Dracena terminalis, doz. ..	24	0	Pelargoniums, per dozen ..	4	0
Dracena viridis, doz. ..	12	0	Rhodanthe, per dozen ..	0	0
Erica Cavendishi, doz. ..	0	0	Saxifraga pyramidalis, ..	0	0
Euonymus, var. dozen ..	6	0	per dozen ..	0	0
Evergreens, in var., dozen ..	6	0	Solanums, per dozen ..	6	0
Ferns, in variety, dozen ..	4	0	Spiraea, per dozen ..	0	0
Ficus elastica, each ..	1	6	" palmata, per doz. ..	0	0
Foliage plants, var., each ..	2	0			



LANDLORDS' FARMING.

INDULGENCE of fanciful extravagance in farm buildings is a thing of the past. Strength, durability, and practical utility are the chief points to keep in view in the restoration of homesteads. During the last few years we have had to repair a lot of neglected homesteads, which originally were none of them really durable. Stud and plaster on underpinning of clay or bricks, clay walls, thatched roofs, or pantiles laid so carelessly as to admit snow or rain whenever accompanied by wind; open cattle sheds, so narrow as to afford little shelter in a storm; roof timbers, so slight as to yield to the weight of the covering materials, were among the most serious faults, most of which betokened ignorant or careless supervision, and contract work badly done.

As an example we may take one of the homesteads which have been set in order during the present year. This is a farm of 130 acres, the buildings of which were badly constructed, inconvenient, and several of them were quite unfit for the required purpose. The horse and cattle yards had clay walls, with narrow open sheds, supported by the walls on one side, and wooden posts let into the ground on the other. Both supports were failing—the walls being cracked and bulging outwards, and the posts being decayed at the bottom; one roof had fallen in, and the others were unsafe. Repairs were evidently out of the question; the walls were replaced by others of 9-inch brickwork, and new sheds 18 feet wide were made with roofs of stout deal timbers covered with corrugated tiles, the back plate on the wall, the front plate on oak posts with cast-iron bases sunk in the ground, the roof being tied to the beams, plate, and posts by iron dogs and angles. The roofs had a rise of 6 feet in centre, and the scantling of timber for it was—wall plate, 6 inches by 6 inches; front plate, 7 inches by 3 inches; beams, 5 inches by 6 inches; principal rafters, 5 inches

by 2½ inches; single rafters, 5 inches by 1½ inch; collars, 1½ inch by 9 inches; ridge, 9 inches by 1½ inch; purlines, 5 inches by 2½ inches; oak posts, 7 inches by 6 inches, and 8 feet long. These particulars are given because the sheds prove very commodious and comfortable, and also because we have seen so many badly designed sheds. Given a wall 10 feet high, a span roof with a width of 18 feet on front, oak posts set in iron bases, and we have a building which can hardly be surpassed either for open shedding or for conversion into stables, loose boxes, or cowhouses, which is easily done with partitions and front of studding and weather boarding upon 2 feet of 9-inch brickwork. No woodwork must be in contact with the ground, but must rest upon hard imperishable materials.

The most serious matter in the restoration of the homestead was the rebuilding of a granary, piggery, fowl house, swill and storehouses. These were all under one roof—a thatched roof with walls of stud and plaster—the entire building being in such a state of decay that any attempt at repairs would have been an absolute waste of money. In this old building the pigsties were a series of small pens on each side of a narrow passage under the granary with no open courts. There was hardly sufficient space for a full grown sow to turn round in any of them, and many a suckling must have been smothered by the sow lying upon it. Now, we have frequently built granaries over piggeries, but care has been taken to have each pen about 8 feet square with an open court in front. Had it been possible to repair the old building the pigsties would have been enlarged and open courts added. It is undoubtedly owing to the confinement of swine in such unsuitable places, and the filthy condition in which they are kept, that swine fever is so prevalent.

Our best arrangement for pigs is enough pens with open courts for sows and sucklings, each pen having an inner door opening into a passage with a door at one end. When the pigs leave the sows they are all turned into a large open shed with a yard in front for feeding; plenty of fresh litter is used regularly in shed and yard, and the pigs are always healthy there.

The dilapidations of the homestead to which reference has been made afford proof of the absolute necessity for prompt attention to repairs; a moderate annual outlay is always preferable to heavy expenditure at longer intervals. To have farms falling in hand now is bad enough, but the burden becomes doubly heavy when to reclaiming farmed out land is added the extensive repairs of buildings. Nor can such outlay be avoided, for if a farm is to be re-let the buildings must be sound, and the land in sound condition too. The only course to adopt is to see that the repairs are in keeping with the style of the buildings, to make such improvements as the substitution of weather boarding for plaster, of bricks for clay, and of tiles, slates, or corrugated iron for thatch. A specification of what is required should be drawn up, copies sent to two or three tradesmen, who may be invited to tender for the work, and subsequently it rests with landlord or his agent to see that the work and materials are satisfactory. We have recently been able to effect a saving of some £70 to the estate by so acting, and though the lowest tenders were accepted the workmanship is highly satisfactory. One word more. Avoid thatch in all new buildings; it may look picturesque, but it wears out quickly, and no tenant upon a small farm likes to have to find the straw.

(To be continued.)

WORK ON THE HOME FARM.

Corn harvest is ended, and most of the corn has been stacked in much better condition than was possible last year. Some of the best samples of Barley have realised as much as 39s. per quarter, but Wheat has not risen above 33s., and we know of one inferior sample being sold for 24s. The higher price affords no inducement to thresh Wheat now, and apart from what is required for seed it will probably be left in stack till after the Barley threshing, unless from any cause there should be a slight advance in price. With such fine weather much Wheat will be sown during the present month, care will be taken to select the best seed of the best sorts, and if necessary it will be screened two or three times upon the principle that like produces like, and if we sow fine seed we may hope to have fine corn next harvest. Let it not be forgotten, too, that our practice must be well balanced, and if we would have as full a measure of success as possible nothing must be wanting in the

soil—drainage, porosity, fertility, cleanliness—all these are indispensable factors to success. If we grow Wheat at all now it must be well done, or it will lead to failure. We happen to have seen both the samples we have mentioned, and the difference in them of 9s. per quarter was only fair, and was a true indication of the way in which the two farms where the Wheat was grown are managed. The superior sample was a legitimate result of sound practice into which sheep folding enters largely; the other was an outcome of general low cultivation, and the crop will not pay expenses. The grower has twice failed in business, yet fails to apply the lessons of adversity, nor is he one to whom advice can be offered; certainly in the inevitable ruin which he appears to court he will have no real claim to pity.

The weather is most favourable for cleaning the land. Broadshares, light and heavy harrows are kept briskly at work, and horse-rakes have been found very useful to get the weeds together for burning. The surface is sufficiently soft to admit of a free use of broadshares with which about an inch deep of the entire surface is pared, the rubbish then being worked out with harrows. After a drought this cannot be done, ploughs and cultivators having to be used, and then the weeds cannot be got out so easily or so thoroughly. Such an autumn as the present is certainly a golden opportunity, which if turned to full account may lead to a great saving of labour next spring and summer. If there is couch grass in the land the cultivators may be useful now, but if there are only patches of it in different parts of a field it should be got out with steel forks before the broadshare passes, even if it is necessary to keep on an extra man or two for the work.

SEED WHEAT.—Messrs. Webb & Sons have sent us some Wheat ears which are remarkable examples of skilful cultivation, and which afford tangible proof of the importance of careful selection. Among them Kinver Giant well maintains its position as a veritable giant among Wheats, but it has no mean rival in Rough Chaff White, the ears of which are almost as large, though quite distinct in appearance from it. Webb's Challenge and their selected Golden Drop have also fine long bold ears. Challenge has handsome plump very white grains; its yield is said to be enormous, and it is also specially recommended as suitable for all soils, and as being equally adapted for either spring or winter planting. It is by no means a new kind, having been introduced by the firm in 1874. Golden Drop is too well known to need one word of commendation from us. We know, however, that very inferior samples are frequently on offer at market under that name, and we certainly advise those who care for this old miller's favourite to procure a supply of so fine a selection, and to try if they cannot produce a crop up to Messrs. Webb's standard. We must admit that among these remarkable specimens the ears of Square Head commend themselves most of all to our approval. The short, thick, and very compact ears as usual form an admirable crown to the exceptionally stout straw which hardly ever becomes lodged. The grain is large and plump, and we know from long experience that high quality in combination with an abundant yield is always present in samples of this general favourite. No doubt the admirable manner in which the ears are kept erect by the sturdy straw tends to promote high quality in the grain. The point is important, and we may mention a sample of pure Square Head of the harvest of 1888 which weighed 65 lbs. per bushel, and which realised 7s. per quarter more than ordinary samples. The ears of Mountain White, though less attractive than others, are not to be passed by lightly. We have seen this new Wheat in cultivation, and believe it has a great future, for it has wonderfully large grain twice the size of most Wheat. The straw is so stout as to be almost reed-like in proportion, yet it is so slender at the top that the heavy ears droop as they ripen, but the straw though very long passes with impunity through every storm, and is never beaten down. We congratulate Messrs. Webb upon the success of their selections. It is a work of national importance rising far beyond the level of a mere trade speculation, for if British farmers are to hold their own in competition with the markets of the world they must strive for the best possible combination of quantity and quality in their farm produce.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. September.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Ir.	
Sunday		8	30.113	55.1	53.3	N.E.	60.0	67.9	47.4	93.8	43.4	—
Monday		9	30.167	60.7	57.4	S.E.	59.0	72.7	49.7	108.3	43.9	—
Tuesday		10	30.247	63.3	59.1	E.	60.1	76.5	58.2	108.6	52.8	—
Wednesday ..		11	30.191	67.9	61.3	S.E.	60.6	80.3	53.1	123.8	48.2	—
Thursday		12	30.203	67.8	63.2	N.W.	61.3	78.9	55.5	125.6	54.8	—
Friday		13	30.236	66.1	62.4	S.W.	62.8	79.4	60.4	123.5	55.4	—
Saturday		14	30.363	59.3	54.1	N.E.	62.7	63.5	55.6	111.2	51.2	—
			30.217	62.9	58.7		61.0	74.5	54.8	113.6	50.2	—

REMARKS.

8th.—Fine and occasionally bright.
9th.—Cloudy till 10.30, then fine and frequently bright.
10th.—Bright and warm, but hazy at times.
11th.—Warm and generally bright, but cloudy at times in afternoon.
12th.—Bright and warm.
13th.—Bright and pleasant.
14th.—Cooler, but fine and pleasant.

A very fine warm week, in fact, with only three exceptions, the warmest week this year, and also a fine one—G. J. SYMONS.



VEGETABLES.

As time rolls on more and more attention appears to be given to the particular aspect of gardening that is represented by food-producing crops. But while this is so it is satisfactory to know that the ornamental and pleasure-giving parts are not correspondingly neglected. With commercial prosperity and a growing disposition among the greater number to engage in home pleasures and occupations the advancement of the useful and the decorative branches will be contemporaneous. "Horticulture can never flourish in any country where the pleasures of life are not sought for at home." Thus wrote the founder of this Journal sixty years ago. Those words represent the truth and go to the root of the whole matter of prosperity in gardening. Those "home pleasures" which it is so desirable to promote may take various forms. The cultivation of plants and flowers may be indulged in by some who are made happier by the association, but, either connected with them or independent of them, fruit and vegetable production is an occupation which affords delight equally to many, and the number is undoubtedly increasing.

Vegetables are now under more immediate consideration, and these have been more extensively represented during recent years at most of the important exhibitions of garden produce than was the case in past times, and with scarcely an exception quality has advanced with quantity. New varieties have superseded the old except in a few instances, and greater care has been exercised by a greater number in producing them in the highest condition. Possibly a tendency has been apparent to grow certain vegetables to an abnormal size; but as any approach to coarseness meets with the disapproval of the best judges there is not much fear that bulk will, except by accident, be honoured at the expense of quality. It is not easy to err perhaps in growing some vegetables too large. Asparagus, for instance; and small ill-fed Peas are inferior to some of the larger and better supported; but unwieldiness in size of the majority of vegetables, root as well as green crops, represents waste both in the form of labour and manure, while grossly overgrown examples are defective both in flavour and nutritious properties.

The cultivation of vegetables with the object of maintaining a supply of the different kinds as they can be had for use, and in the best condition in which they can be produced, as estimated by their appreciation at table, is an engagement worthy of the best efforts of the best men in the gardening ranks. As is well known the most competent of these pay particular attention to the culinary department, and it is very rare indeed that those who succeed there fail generally. Competency in vegetable culture is one of the most substantial of the gardener's acquisitions, and the possession of the qualifications give to a gardener a distinct advantage in his calling. This is a fact, and it should be recognised by young men especially who are hoping to attain to good positions in life. If they make themselves masters of the art of vegetable production, the knowledge they have gained will be available for other purposes, and they will not experience many cultural difficulties which they cannot surmount in other departments so far as means permit.

Having in view the great importance of a full and high class vegetable supply, also the desirability of judging by comparison of the claims to favour of the different varieties, recognising also the desirability of acquiring information pertaining to the whole

subject, the Council of the Royal Horticultural Society placed themselves at the head of a great effort to bring garden vegetables more prominently forward, and to assign them, in fact, a front rank position in the gardening world. The result of the decision may be seen at Chiswick, for these lines will reach many who are interested before the conference closes, and the gathering is a great success. Entries are received from various parts of the country of the best examples of culture from England, Ireland, Scotland, and Wales, with samples from France. An idea of the extent of the aggregate contributions may be gathered from the provision made for their reception. The famous vinery, 180 feet long, is furnished with four lengths of tabling, and the same number of tables are similarly arranged in a tent 190 feet long, or allowing for space for the conference, the reading of papers, and discussion, over 1000 feet in length of tables are required for the selected produce as invited by the Committee.

As a non-competitive display it is an extraordinary exhibition, and it is doubtful if any other horticultural society in the world could obtain such a show without offering a single prize; all the exhibitors and judges performing their tasks without reward beyond the satisfaction derived from assisting in a useful work. This fact alone must be most encouraging to the Council and officials of the Royal Horticultural Society, as it proves conclusively that this body still possesses considerable power over the gardening community of this country, and its influence exercised in right directions is productive of much good. It also redounds greatly to the credit of horticulturists in such a prize-giving and prize-winning age as this that so many are ready to give their services for the general rather than special or individual benefit. As M. Henry Vilmorin rightly remarked at the dinner held on Tuesday evening, the Chiswick exhibition reflects as much honour on those who have provided it as upon the Council of the Society who originated the idea and the Committee that elaborated and carried it into execution.

Regarded simply in the same way as a competitive show of vegetables, that at Chiswick might not be considered satisfactory except in a few classes like those for Onions and Carrots. But the chief object has been to show as many distinct varieties, types, or strains as possible, each sufficiently true to indicate its respective characters, and to enable the public to form some idea of the best in each class. Much assistance has necessarily been rendered in this direction by seedsmen who in the majority of cases show praiseworthy samples of their specialties, and in the few instances where there is a falling off in quality it is mainly due to the date being a little too early for the particular sorts. This is seen in the Brussels Sprouts class more especially, but it is noticeable also in the Savoys and some other classes. Amply sufficient is staged in all classes to afford the Committees due opportunity of making fair comparative selections, and to these we must look for the practical outcome of the Vegetable Show. It is true that a few of the leading seedsmen have not contributed to the display, but in private growers' collections many of their varieties are admirably represented, so that it will not materially affect the decisions of the selecting Committees.

Awaiting these selections we have been unable to give more than a summary review of the classes and exhibits, pointing out those varieties which are shown in the best condition, and naming the seedsmen or gardeners who contribute most largely to this instructive Exhibition. The different districts and soils from which the produce is sent should also indicate in an interesting manner, when all the particulars are available, the behaviour of certain varieties under widely different circumstances—a good test of their characters.

Novelties are not numerous, and there are no special departures from ordinary types to be chronicled, but all who visit Chiswick must agree that it is the most representative and important display of vegetables ever brought together in this country.

The following are the Committees for examination and selection in the respective classes, though some of the members were unable to attend, and others were substituted.

A. Green Vegetables.—W. Nutting, J. Muir, J. Walker.

B. Fruits and Pulse.—P. Barr, W. Iggulden, J. Burnett, R. W. Ker.

C. 1, Potatoes.—C. Fidler, G. T. Miles, J. Smith, P. McKinlay.

C. 2, Tubers, Bulbs, &c.—A. Watkins, C. J. Waite, J. Willard, M. Dunn.

D. Tap roots.—A. Moss, F. Ross, G. Breese.

E. and F.—Saladings and Miscellaneous.—W. Poupart, W. Wildsmith, E. Molyneux.

Referees.—A. W. Sutton, C. H. Sharman, J. Harrison, T. Laxton, W. Ingram, C. Silverlock, J. Douglas. Chairman, Dr. Hogg, F.L.S.

The members of the Special Committee act as stewards on the occasion.

MANDEVILLA SUAVEOLENS.

LARGE, pure white, sweet-scented flowers always secure appreciation. They are valued more particularly when forthcoming at a time of comparative scarcity, when other flowers of the desired character are not in season. Of this description is *Mandevilla suaveolens*. It flowers in late summer and autumn, producing its pearly white deliciously scented flowers profusely and successively over a lengthened period. It is, indeed, a very handsome greenhouse climber, or rather twiner; native of Buenos Ayres. Flowers sub-corymbose or in a simple raceme; corolla salver shaped, with naked throat and tube, pure white, large, very fragrant, and profusely produced; leaves opposite, oblong, dark green. It is of free and rapid growth, vigorous shoots extending over a large space—20 to 30 or more feet in a season under favourable circumstances, which are rarely accorded, consequently this very desirable plant is seldom seen in a flourishing condition. We may occasionally see a plant thriving fairly well under pot treatment, but such are exceptions to the general rule. In brief, my experience accords with that given in Johnson's "Gardeners' Dictionary"—viz., "Does little good as a pot plant, but is splendid when placed out and allowed room in a greenhouse or conservatory, where fine climbers are prized." I have tried to grow and flower it in pots but with little success, as the plants, whether from seed or cuttings, afforded only a few flowers, and after a time were the most unsatisfactory of any plant I have ever attempted to grow, for the foliage invariably became a prey to red spider, or was irretrievably injured by the steps taken to expel the pests. The plants grew freely enough for a time, advancing promisingly up to the flowering stage, when they seemed to lack force. Feeding only accelerated the collapse of the plants. I have recollection of a well-flowered plant grown in a pot and trained to the roof on an intermediate house at the nurseries of Messrs. Backhouse, York, some thirty years ago, and it was the only well-flowered plant of it I have seen growing in a pot. Others I have seen before and since were failures, and clearly through ill-health. Seedling and cutting plants alike grew freely enough for a time, but only to sicken and die. Why? The only analogies that occur to me are in *Luculia gratissima* and *Rogiera gratissima*, both of which are miserable objects grown in pots compared with the magnificent heads of flowers produced when planted out.

Whatever causes the difference is beyond "ken," but there is this in relation to *Mandevilla suaveolens* that a plant was never seen flourishing for any length of time in the compost advised by the authorities. All to which I have access recommend a compost of "good peat and turfy loam in equal parts, to which may be added plenty of silver sand." All I have seen succeeding were growing in soil of which peat formed no component; in fact, a light porous and non-phosphatic soil seems fatal to the health, a sturdy growth and floriferous habit. In available potash salts, phosphoric acid, and soluble silica lies the secret of success. Potash salts and phosphoric acid are rarely found in peat, and the loam, if it be light, often does not contain a measurable quantity of either. Lime is not largely present in peat or turfy loam. This, however, may not be a necessity, yet strong loams contain phosphatic matter much more abundantly than peat and turfy loam. The plants may find sufficient phosphatic and potassic matter in the leaf soil or well-decayed manure, which usually occur in compost of peat and loam, but those being speedily exhausted the plants collapse.

Light soil, no matter how rich, will not keep *Mandevilla suaveolens* healthy and floriferous. It requires a strong loam, and preferably off chalk. Nothing is better than the top 2 or 3 inches of a pasture taken off with its turf. Such requires no admixture, merely needing to be chopped up and put 24 inches deep over a foot

depth of efficient drainage, secured with a 3-inch thickness of old mortar rubbish. A border 2 feet wide is ample. The plant will grow and have stems, many issuing from the base, and nothing will prevent its flowering every year from August onwards to late autumn, only train the growths 6 to 9 inches from the glass unshaded. We have, however, a little shade of whitening this year, and the plants are flowering as freely as before, but the clusters are not so large as where the growth is better solidified.

The growths require to be trained rather thinly—i.e., they must not be allowed to become an entangled mass. We have two planted out which have not a tenth the room they require and deserve, consequently the growths become crowded. The plants this year have made growth outside, some shoots having come through the top light apertures, and are rambling over the roof outside, the foliage having a distinct coppery hue, and flowers are produced as freely as inside. It is said to be half-hardy. Who has tried it in a cold house or against a wall? It requires water in summer to keep it growing—a good supply whenever the soil becomes dry. When in full foliage and showing bloom liquid manure may be given, but we do not find it necessary, as our plants grow too freely for their limited space, and we never syringe them.

When the main leaves have fallen the growths may be cut well back, which admits light to the wood retained and to the plants beneath, both being benefited by the thorough exposure. We cut hard back to a joint or two of the old wood any time before March. When extension is required the well-ripened growths of the previous season may be left as long as desired, but it is no use relying on soft growths, as only the well-ripened wood can be relied upon to furnish vigorous free-flowering growths. It is, however, amenable to spur or extension pruning as a Vine, and as satisfactory in results, and the roots have favourable material for ramification and deriving aliment. During winter the soil should be kept dry; but a moderate amount of moisture is necessary to keep the wood plump.

The summer treatment consists in merely regulating the growths as they advance, disposing them equally over the trellis, each having space for the exposure of its foliage to light, thinning out where likely to become too crowded, as when the shoots become entangled it is most difficult to separate them. Judging from what our plants seem capable of I would strongly advise no niggardly allowance of space. Either of them would cover 1000 square feet of space, and give a wealth of flowers in the late summer months.

Propagation is effected by cuttings of small, sturdy shoots 3 or 4 inches long inserted in sandy soil in a propagating frame or under a bellglass. It may also be readily raised from seed in heat.—G. ABBEY.

TOMATOES.

TOMATOES have now become a necessity in most households, and are consumed by artisans in as great a degree as by the wealthier classes, which alone formerly indulged in them. This being the case the spirit of inquiry and trial is abroad, and where a grower was formerly content to have one variety alone he now gives a trial to several. The same thing can be seen in the seed lists, for the varieties multiply exceedingly, each novelty being supposed to be a great improvement on all others. Having somewhat of a mania like the Athenians of old for some new thing, especially in Tomatoes, I gave a trial to several novelties, and I now give my experience of them.

Prelude must lead the way, for its name entitles it to such a position, and it earned its name by being the first to ripen fruit. Our distinguished gold medalist, Mr. J. Wright (whom I heartily congratulate on his recent success) very kindly provided me with the seed of Prelude, and I am very pleased with it, for it is very early, a wonderfully free setter, and the fruit of exceptional quality. The only drawback being that it is small, an attempt to give it more size was requisite, and I note that this has been done at Chiswick by crossing with Perfection. If the productiveness and earliness of Prelude have been preserved with the gain of the Perfection size, then the new variety can fitly be named "Ne Plus Ultra," for improvement can go no further. When obtainable I shall certainly give this new Tomato a trial.

Mr. Peter Henderson of New York very liberally and kindly provided me with several of his novelties, amongst which were Tomatoes Golden Sunrise, Lorillard, and Volunteer. Golden Sunrise is, as its name implies, a yellow variety, and may be termed a Golden Perfection, for it is very similar in growth, size, and shape of fruit and bearing. It is magnificent in appearance, and a dish of its fruit, weighing from 6 ozs. to half-a-pound each, would grace any table. It has a beautiful transparent appearance with perfect shape and in some examples with a warm red blush like that of an Apricot, but bright not dull in colour. The skin is so thin it is

not perceived in eating, and the flavour is unique. All who have tried it pronounce it the best flavoured Tomato they ever tasted. Yellow Tomatoes being not readily saleable I only grew three plants, but I find it in so much demand that I could more easily sell it than the scarlet varieties. It has one drawback, for it is not a good setter and bearer. Volunteer, not so flat but deeper in the fruit than Perfection, is a very handsome bright scarlet Tomato—good bearer, early, and also succeeds out of doors. I prefer it to Perfection in all ways, and strongly recommend it for general cultivation. Lorillard bears a very large good-looking fruit, is a very strong grower, but I did not find it a good bearer, so I shall discard it.

Yorkshire Wonder, sent out as a scarlet variety, turns out to be of the Acme colour. It is of the egg-shaped race, and is of good flavour, a good bearer and setter, and to those who favour this kind of Tomato it will no doubt prove acceptable. It is really no novelty, however, for last year our Rector had the identical variety growing, which he said he had received from friends in Yorkshire, and I told him I should not care to grow it on account of its colour, little thinking I should buy it as a novelty under the name of Yorkshire Wonder, and described as a scarlet-fruited kind.

Laxton's Open Air and Hooper's Conqueror are bearing very heavily, and ripening their fruit outside, and can be recommended highly for such purposes.

Cladisporium has been very troublesome to my plants, and as I never had it before I have come to the conclusion that I brought the disease from Somersetshire, for shortly after paying a visit there, where the disease was bad, my plants were attacked. Perhaps some reader of this can inform me whether this is possible and probable.—H. S. EASTY.

GLADIOLI AT THE CRYSTAL PALACE.

To those who, like myself, highly estimate the beauty of this grand autumnal flower, and have persistently brought it forward in the hope of inducing many to cultivate and exhibit a flower which, despite its drawbacks, is one so well calculated to please the cultivator, the falling off in the exhibitors of the Crystal Palace Exhibition is a matter of very sincere regret. It is true that there was more competition amongst amateurs, and that at any rate one good exhibitor has been added to the list of the few who show there, but it is in the large collections that the great falling off is to be traced. Not only was there no collection from Messrs. Kelway of Langport, who have always set up a grand collection of blooms, but the north was absolutely unrepresented. Mr. Campbell of Gourrock did not put in an appearance, neither did Messrs. Harkness and Son of Bedale, and the collections of both of these firms always formed a large and beautiful feature of the Show. What is the reason of this? I am told that Mr. Kelway is exhibiting at Paris, and that all his energies are devoted to making a display at the world's fair there, and I presume that the northern men do not find it pay. Nor is it to be wondered at. There is but one class in which they can exhibit, and should they miss the first prize the others would not pay the expense, unless they were prizewinners in other classes, of a two or three days sojourn in London, and travelling expenses for such a journey. Nor in a business point of view is it likely to be very profitable to exhibit even for advertising sake. It is not worth taking all the trouble of coming up so far. Amateurs have little to encourage them; they can only exhibit in one class—at least, that is the rule, though perhaps there are ways of evading it, hence to amateurs at a distance it does not offer many temptations, and the exhibitors of other years, Mr. Whitton of Bedale and Mr. Catley of Bath, &c., no longer put in an appearance. And yet what flowers attracted so large a number of visitors as these did? They equal in variety and brilliancy of colour the Dahlia itself, and are certainly far more graceful in habit, shape of flower and spike. They range in colour from pure white to the most brilliant scarlet, and are admirably suited for cutting.

Mr. Burrell's collection of ninety-eight spikes was perhaps not equal to that of last year, and one missed especially the splendid spike of Snowdon, the pure white seedling he exhibited last year, nor do I think he had any seedlings to equal it, although Avalanche, a pure white, and Doris were exceedingly good. Amongst the best of his flowers were—

Abricote.—A lovely flower, pure apricot colour, without any shading of any other tint; the flowers are large, and the spike compact.

Africain.—Dark slaty red on a scarlet ground, a very remarkable looking flower.

Anna.—Brilliant cerise, striped deep carmine.

Atlas.—Large flowers, transparent white slightly shaded with lilac, a fine spike.

Baroness Burdett Coutts.—Very large flowers of a rosy lilac colour flamed with carmine on the lower petals.

Bicolore.—Clear rosy salmon with large white lower petals; a remarkable flower.

Caméleon.—Lilac with dark centre, white blotch, very pretty and compact.

Cervantes.—Rose slightly coloured with lilac, and largely flamed and shaded with carmine, with white lines.

Amitié.—A fine flower, rosy colour with white.

Dahlia.—Fresh rose, shaded and striped with clear carmine, a beautiful flower with compact spike.

Crépuscule.—Magnificent spike of large flowers, rosy lilac, with carmine red flakes.

Enchanteresse.—A magnificent spike of nearly white flowers; the flowers are enormously large, and seem to indicate a fresh start in the flowers.

Grande Rouge.—Brilliant red with large violet spots, an improvement on that fine old flower Meyerbeer, which it strongly resembles, but is larger and blooms earlier.

M. Adolphe Brongniart.—Very old, but still in its style and colour almost unrivalled; the flowers are large, of a beautiful satin rose, with deeper coloured stripes.

Avalanche.—A pure white seedling of Mr. Burrell's, already alluded to; the spike is long, and although the flower is surpassed by Snowdon, it is still a most desirable and effective flower.

Cormie.—Rosy carmine and bordered with cerise, lined with pure white. There were also several of his own seedlings, and altogether the stand was a very effective one.

I do not see why I should write of the amateurs in the third person, and so will at once say that I do not think my stand was quite equal to that of last year, although I had some very fine blooms amongst them, and besides those already mentioned in Mr. Burrell's stand, of which I had several in my own, I had also *Arrière Garde*.—Large rosy salmon flowers, strongly flamed with violet, and with yellow blotch. *Minos*.—Large salmon rose flower, flamed and margined with cerise red, with amaranth in the centre. *Sceptre de Flore*.—Large flowers, white throat, carmine red blotch in the centre, dotted with clear red; this flower was finer this year than I have ever had it. My friend Mr. Lindsell, who is so well known as a Rose exhibitor, came forward for the first time and exhibited an admirable stand of flowers, one spike of Baroness Burdett Coutts being especially fine. The stand which obtained the third prize had not a single name to any of the flowers, a proceeding which I think ought to be discontinued. What is the use of making rules stating that flowers must be correctly named if it is so flagrantly violated? Moreover, it leaves the door open for exhibiting duplicates, and I think ought to entail disqualification.

Some persons may think that my notes are somewhat coloured by the grievous loss* that will make this Show one to be well remembered, but as this is written nearly a fortnight afterwards when I have become reconciled to my loss I think that this notion may be dismissed, and I only wish that I could write more cheerily of one of my favourite flowers than I am in justice constrained to do.—D., Deal.

IN THE MIDLANDS.

ONLY a small amount of space is at my disposal this week, and therefore all that can be done is to record what was noteworthy in three gardens visited, and what was seen between them. Pears and Plums at Impney, barren orchards in a great fruit growing district of Worcestershire, excellent Vine, Orchid, Peach and Melon culture at Abberley, and a beautiful flower garden scene at Witley, are a few of the objects worth dwelling on, as a little that is instructive can be gathered from the cursory examination.

IMPNEY IN SUMMER.

My former visits to Impney have been in the spring, when fruit trees were in blossom outdoors, and forcing operations going on under glass. It is a good garden, at all times interesting, but in summer the fruits of the gardener's work are seen, and the beauty of the surroundings of the splendid mansion appreciated. What the fruits under glass were the excellent competitors at the Crystal Palace shows are aware. In a splendid contest there, with collections of twelve dishes, the Impney fruit bore the palm. I did not think the fine Pine, which was just changing on my visit, could have made such an advance, but the weather was favourable, and though not quite ripe at the show it displayed superior culture. There was no mistaking the high finish of the Muscat Grapes that were hanging on the Vines, and in that respect there was

* The loss referred to, which must be generally regretted, was of a favourite gold watch, value forty guineas.—ED.

not a bunch in the show to excel, if equal, that in the Impney collection. In a single bunch contest Mr. Chaffins would probably have come in first, because of other high qualities with good finish, but for translucency of colour the Impney bunch was unique. Lest these remarks may appear to savour of presumption it may, perhaps, be well to say that I happened to be judging in the Grape classes at the Palace, therefore am not writing at random on this subject. Other Grapes at Impney were also good, and the Peach culture closely resembled that at Ketton, therefore no more need be said on that subject; and I am anxious to direct attention to a bold yet well considered example of root-pruning in Pears, and the striking results achieved.

The wall is 100 yards long, and 14 feet high. The whole surface covered with horizontally trained trees. They have rarely failed to bear good crops of large fruit, but of late have been deficient in colour, flavour, and keeping properties. The roots had gone "down," and accumulations of soil from time to time buried those nearest the surface about 18 inches deep. Two years ago the soil was removed from them to a distance of 3 or 4 feet from the wall, and a mixture of good turfy loam and wood ashes placed in contact with them. Mulchings of manure kept it moist, and the following spring young feeding roots were visible. These were encouraged with further dressings of "good stuff," and by the autumn the new compost was permeated with a mass of fibres. It was then resolved to cut the large roots off at the distance from the wall indicated, and to trust to feeding and the water engine to counteract the check thus given. The roots were sawn asunder, and the ends pared with the knife, more of what had proved good placed round them, made firm and mulched. It was bold action, but Mr. Parker had faith in the power of the new roots to imbibe what was needed, if undue evaporation from the branches and leaves was checked by the free use of the syringe or garden engine in dry weather. After the fruit was set the best on each spur was selected and retained, the others removed; the result of this, with plenty of liquid food, is such a wall of Pears, which, for uniformity of crop, size and colour of fruit, it would be difficult to surpass, and I have seen nothing to approach it this year. The varieties were admirably chosen, presumably by Mr. M. Temple, and the present cultivator has done credit to the collection. Pitmaston Duchess Pears weighed over a pound on September 1st, and will be considerably heavier when gathered.

Near one end of the wall two trees were not treated as above described, the roots were not cut off, and here we find different growth, longer softer shoots, and by contrast markedly inferior fruit. The difference is most striking, and the effect of skilful management is apparent at a glance. The opposite side of the wall facing east is covered with Plums. The well trained trees have been similarly treated, and the long straight branches were roped with fine fruit from base to extremity, and Mr. Parker has reason to be proud of his work.

As no doubt some readers will wish to know how the Chrysanthemums were looking, they can be told in one word—splendidly. Strength with firmness of growth and thick bronzy looking leaves were the characteristics, and no doubt the precursors of first class blooms.

Strawberries in pots near them were equal to the best I have ever seen at this season of the year, and a great deal better than thousands will be two months later in the season.

The terrace flower garden was very beautiful, but all that can be mentioned in it were the glowing rosy magenta beds of Amy Hogg Pelargonium. The variety is seldom seen now, but in masses as at Impney it is one of the most distinct and beautiful of all.

Some Apple trees were laden with fruit, notably Stirling Castle, and there seemed no new outbreak of canker, so Mr. Hiam's insects must have given over eating. Mr. Parker was so pleased with that gentleman's visit, his researches, honesty of conviction, and earnestness, that I regret I could not have a hearty handshake with my literary opponent. He did not, however, convert Mr. Parker to his views.

BARREN ORCHARDS.

Worcestershire is one of the greatest of the fruit-growing counties of England. In a drive of fourteen or fifteen miles there were orchards to the right of us, orchards to the left of us, and trees in the hedgerows overhanging the roads. But ninety-nine trees out of a hundred were fruitless, old orchards and young ones alike nearly destitute of fruit, and the majority absolutely so. The best cultivators are not better off than the worst, though they would have had better fruit if the trees were bearing. Whatever ill effects the last insalubrious summer left behind a terrible hailstorm in May cut off the blossom for miles. It is a sad and dreary outlook, a decidedly bad year for the fruit farmers in that great fruit-growing district.

ABBERLEY.

The "Hundred House," just beyond Witley, is the halting place for Abberley. It is a famous roadside inn, where magistrates' meetings are held, and a favourite rendezvous for travellers. It is 500 feet above the sea level, and a five or ten minutes uphill walk leads to Abberley Gardens, and from thence is a great deal steeper and higher climb to Abberley Hall. Though death brings changes, the successor to the late squire evidently affords the means for the maintenance of his garden and pleasure grounds, and he (William Jones, Esq.) has in Mr. Arthur Young a gardener who will make the most of those means if anyone can, and not spare himself in the effort.

Only a few features of the garden can be alluded to. The chief range of glass is 100 yards long, and comprises five vineries, I think,

three or four Peach houses, and a Fig house. Higher up the hill side is a parallel range, but not so extensive, in which stove decorative plants are grown, with compartments for Cucumbers and Melons. At one end of the range and at right angles with it are two span-roofed green-houses, and at the other end a block of three houses, with a connecting corridor, one for Roses, and two for Orchids. These are nearly new and excellent, with lantern tops and side ventilation below the plants. The gardener's object was to have all the air at command the plants required, and no sharp currents. The condition of the occupants of the houses shows how well their wants are met. Mildew gives no trouble in the Rose house, and apparently nothing else does in the Orchid houses. Richardson's lath blinds are used and much liked, and besides suiting the plants they saved the roofs from being smashed with a terrible hail storm, as hundreds of squares in the vineries were, and Vine leaves cut into shreds.

Under the stages in the Orchid houses are beds of leaves, kept moist, and the plants are in the best possible condition. It is hard to believe they were unsightly imported pieces little more than a year ago. No healthier Cattleyas can be seen, while *Laelias* anceps, albida, and others are remarkable for their vigour. After reading the account of the natural habitats of the plants in one of Messrs. Veitch's serials, Mr. Young suspended the plants from the roof in the Rose house in the summer, letting them have the full sun, and syringed them several times a day. Their growth is remarkable, and stout flower stems are pushing from every pseudo-bulb. All other kinds are also in the most satisfactory state. *Calanthes* are unusually vigorous in strong loam. Most of them are in pots and fine, but a few in wire baskets supported on pots are still finer; and "that's the way," remarked the cultivator, "to grow *Calanthes*." But we must move on.

The Melons in the lean-to range demand mention. A more uniform crop of handsome fruit, of the true Blenheim Orange (no other being grown), and cleaner, stouter plants, could not be imagined. They are thinly trained 18 inches or more from the glass, never shaded, never syringed, and had not a speck of scalding or an insect on them. They are grown in strong loam and lime rubbish, and not dried off for ripening. Such stout dark leaves, every one exposed to the sun, impart to the fruit the best of flavour.

We enter the chief range. The Peaches and Nectarines were gathered except from two trees, and the fruits on these were up to the Ketton standard, thus quite first-rate. Old Vines have been invigorated and young planted. The improvement of the former in two years is wonderful. The roots being in in and outside borders is a great advantage, as one set can sustain the Vines while the others that are raised and placed in fresh soil can take free possession and improve the growth and the fruit. That is what has been done at Abberley with such excellent results. The Black Hamburgs have produced Grapes of the first quality. Strong young rods from old cut-down Muscats have full and heavy bunches. The late house is somewhat of a puzzle, for what is usually the freest and easiest of Grapes to set and finish, Black Alicante, gives far more trouble in those respects than does that splendid late variety Mrs. Pince. It is questionable if this has been seen better represented. If the fine berries in the large full bunches colour well, as they promised, they will equal the best productions of Mr. William Taylor either at Longleat or Bath, and that is more than can be said of any others I have seen in my not very limited travels. The Alicante must be faulty in variety, for the Vines are in the best of health, the crop good, fruit well finished, but the berries somewhat irregular, owing to difficulty in setting, and not such as the cultivator, with his high aims, would desire to see. Allusion to others that are good must be omitted, or some young Vines would have to be passed unnoticed.

Both Mr. Austen of Witley and Mr. Parker of Impney have seen as good Vines and grown as good Grapes as most persons have, and they speak in the highest terms of the Abberley culture. The youngest were planted in March this year, in an inside border—note its size—2 feet 3 inches wide and 2 feet 4 inches deep, the 4 inches being drainage. Now note the size of the canes. The girth was not taken at the thickest part at the bottom, but half way up, as fairly representative, and this was 2½ inches. It must be said they were brown, hard, with the bold round buds the Grape-grower loves to see. The leaves were not 15 inches across, or anything of that kind, and proportionately soft and thin, "like Rhubarb;" but I have no remembrance of any stouter in texture. One, as having practically done its work, was taken off and placed in the scale, which it turned at 1½ oz. It was an Alnwick Seedling leaf from a yearling Vine. Perhaps this method of estimating the value of Vine growth may cause a smile. Be it so, then let the smiler prove it is not a better index of excellence than that of superficial dimensions. I do not know how the weight named compares with others that may be weighed elsewhere, but shall be glad to hear from gardeners who are not afraid to take one from a practically ripened Vine. The removal would do no harm, especially if from the upper part of the cane that would be cut off in pruning.

Vines planted two years ago last February have yielded two good crops of excellent fruit, and others of the same age cropped lightly may be expected to produce superior bunches next year. The soil used in the shallow borders is heavy loam off marl with a free addition of old mortar rubbish and charcoal. A little "Thompson's" has been applied as a top-dressing to the surface covered with stable manure to prevent over-dryness there. Mr. Young is no believer in the rampant system of growing young Vines, but works, as he says, on "Taylor's principle of stopping the leading cane at when 8 or 9 feet long, and pinching the laterals as practised with Vines for fruiting in pots." Mr.

Taylor will not claim to be the originator of the method, though he is undeniably one of its best exponents, and somehow manages to grow much better Grapes than several persons do who have written so much against it. In Mr. Young he has a worthy disciple.

A word must be said on open-air Peach culture. The wall faces south, is 100 yards long and 12 or 14 feet high, I forget which. It is completely covered, without the growths being overcrowded, and from end to end and top to bottom there was a fruit where it was wanted—no blanks. The thinning had been severe, leaving the fruits 15 or 18 inches asunder, the number then fully equalling all requirements, and the fruits being finer than if the crop were heavier. Surface roots by mulching about 5 feet from the wall, with periodical waterings as required, and not an insect allowed on the trees, are the leading points in the success attained, aided probably by a glass coping. Just as I was leaving, a Merryweather engine and 200 or 300 yards of hose were being put into action for the trees.

Young hardy fruit plantations are growing into bearing, but this is not a fruit year in the district. I noticed several apparently new, yet at the same time apparently healing canker specks on some of the trees. We felt sure they were not caused by insects, and Mr. Young was speaking of sending some examples to Mr. Hiam. I wonder if he has done so. If he has not I hope he will, for I am willing for this to be a test case as to insects being the originators of the wounds or not.

Nothing can be said about the pleasure grounds, conservatory, remarkable memorial tower, and other features of Abberley, beyond Mr. Parker's remark on leaving—"The place is well worthy of a visit by gardeners, and a credit to master and man."

WITLEY.

From the heights of Abberley we look down on Witley, a mile distant, the splendid mansion of the Earl of Dudley being situated in a richly wooded vale. The golden dome of the church which adjoins the Court is a conspicuous feature in the landscape as it glitters in the sunlight on a bright summer's day. Witley is as different from Abberley in its characteristics as it is possible to conceive. The miles of drives are level, or nearly so, firm, smooth, clean, with superb lawns beautifully kept, and neatness and high order everywhere prevailing. Witley is not a "fruit place." Pines, Melons, Tomatoes, and Cucumbers are well grown in houses and pits, and a good collection of hardy fruits outdoors, but little on the trees beside leaves this year. Vegetables are grown in enormous quantities for the household, and there the work of utility ends.

Witley is essentially a "flower place." Of these Lady Dudley is an ardent admirer, and her taste in floral decorations is proverbial. No mixtures in room or table adornments are permitted, but one kind alone for each vase, and one alone for the table, varying according to seasons and circumstances, is the prevailing rule. Thus variety is combined with individuality, and in that way the flowers employed give the greatest satisfaction. There are good ranges of plant houses, and supply pits well filled with well-grown plants, and it is thought if ranges of glass were erected for Vines, Peaches, &c., her ladyship would want them all filled with flowers. "Fruit can be bought, but flowers must be grown at home," is evidently an established idea, and the best of the former that can be obtained Mr. Austen has to procure. It was a new experience to a gardener accustomed to grow the best, but he has settled down to it, and is no doubt very happy in his delightful home with its beautiful surroundings. There are flowers everywhere for cutting, acres of Violets, Roses, and other popular kinds, admirably stocked herbaceous borders, great batches of plants and shrubs in pots for forcing, and a few thousands of Chrysanthemums, evidently in charge of an able cultivator.

But the flower garden is the pride of Witley. It is situated on two sides of the mansion, south and east enclosed by a balustrated wall. The extent of the ground is about 10 acres. It is surrounded by a walk, flanked with the choicest of Conifers, golden columnar Biotas, dark Yews surmounted with golden balls, Araucarias, and other appropriate specimens that cannot be enumerated, the whole evidently having been arranged with great care, and from the time of planting till now received the best of attention. The ground slopes from the mansion to the centre, then rises again to the opposite extremity, whence golden gates open to the park beyond, and there in contrast to the art within stand gigantic Oaks of great antiquity, relics of the forest primeval. On the slopes of the undulating lawn, which is faultless in character and keeping, are beds of evergreen and flowering shrubs, masses of flowers that "tell" in the distance—Tritomas, Marguerites, Japanese Anemones, Dahlias, and others suitable for the purpose. There are neat carpet and effective flower beds near the walks, and here and there marble vases tastefully occupied with appropriate plants.

Near the centre of the two sections of the garden are fountains such as cannot be seen elsewhere in this country. The garden is open to visitors by arrangement, and Lady Dudley, seeing a party of about twenty persons, kindly thought they would like to see the fountains in action, and gave the order accordingly. It was a brilliant afternoon, the flower garden just at its best, and when the water rose high in the air with a rushing sound, and the great arching streams appeared from one fountain, and cascades rushed down the other, a diamond fence of water springing up round the margin, the scene was surely one of the brightest and fairest that "ever the sun shone on." The mansion with the handsome conservatory and church form an imposing architectural pile, and abundant relief to the handiwork of man is afforded in the individual specimens and bold masses of contiguous trees.

Near the mansion commences what is known as the Wilderness—a long twisting dell, with handsome Conifers on the slopes, including a beautiful example of Prince Albert's Fir, *Abies Albertiana*, the noblest trees of *Pinus Nordmanniana* I have yet seen, rich deep green Douglas Firs, a heavy background of deciduous trees, and here and there round beds of *Hypericum calycinum*, studded with the golden many-anthered flowers, the growths cut to the ground yearly—evidently the right method for producing cushion-like masses of blooms. Then we go on to the nursery, an enclosure of 8 or 9 acres, where all sorts of trees are raised, vegetables of different kinds grown, and even here large breadths of flowers for cutting to meet what must be the enormous demand. Mr. Austen has a great charge, and is equal to it. One of the most undemonstrative of men, he is ready to do a kind act when he can, and the last of these of which I was the recipient was a twelve-miles drive into Worcester.—W.

WATSONIA IRIDIFOLIA, VAR. O'BRIENI.

WATSONIA IRIDIFOLIA, and several varieties have been known in English gardens for the greater portion of the present century, and

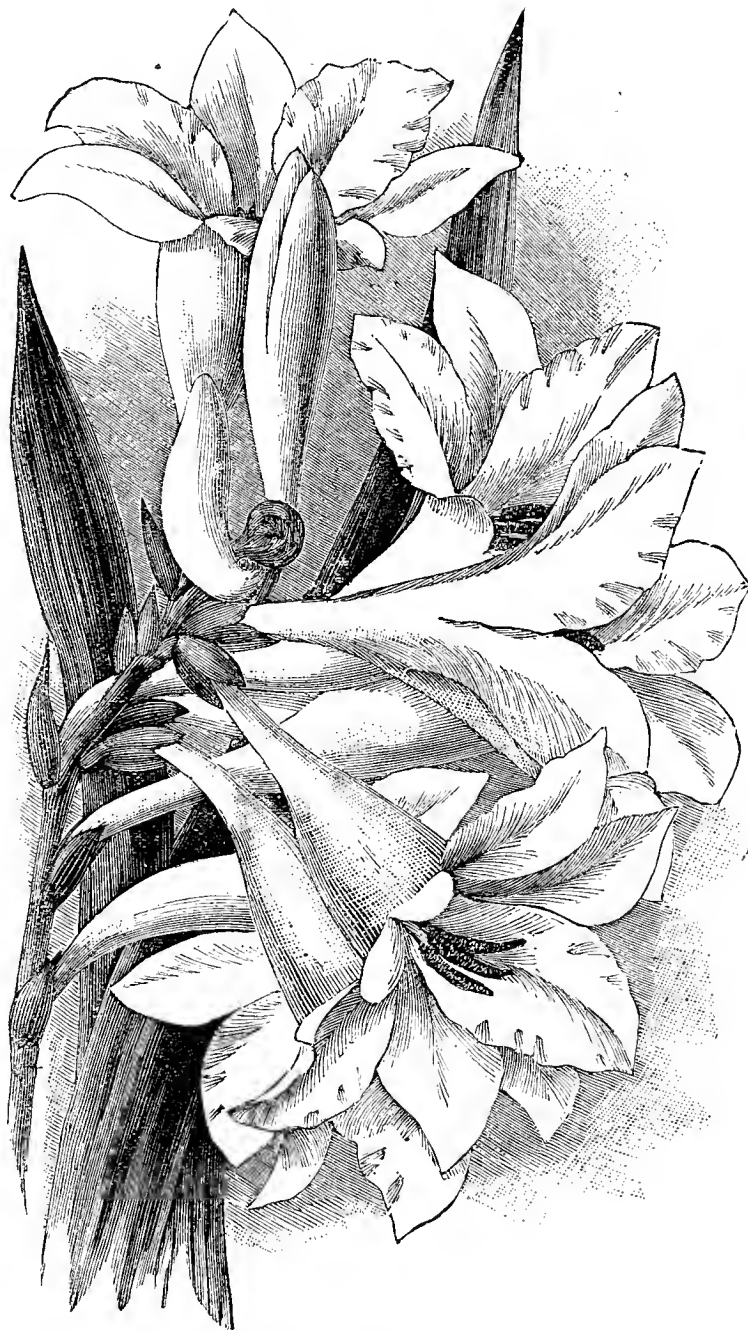


FIG. 34.—*WATSONIA IRIDIFOLIA*, VAR. O'BRIENI.

W. iridifolia var. *fulgens* is a brilliant companion for the beautiful *W. rosea*, which was only recently certificated by the Royal Horticultural Society, and represented in this Journal, p. 225, September 12th last. In the variety now depicted (fig. 34), however, we have a most useful and charming addition to the Watsonias, and it further possesses the claim of being the only pure white Irid known. When exhibited before the Floral Committee of the Royal Horticultural Society at the meeting held at the Drill Hall on Tuesday, September 17th, it was at once awarded a first class certificate.

Mr. J. O'Brien sends the following particulars concerning it:—"The history of *Watsonia iridifolia* O'Brieni is that a correspondent of mine in the Cape found it as a single plant among many hundreds of coloured *Watsonias* of all shades. My correspondent, who was an ardent lover of Cape bulbs, and knew them well, immediately recognised it as a new plant. He took it home and again flowered it, and all the people who knew such things marvelled at it, for it was deemed impossible to ever get a snow white *Watsonia*. It increased to some six or eight bulbs or corms, which I acquired, and which at that time (last year) represented the entire stock. Still I had no faith in it, as I knew a variety of *Watsonia* called white, but which was not so—indeed neither white nor rose, but white washed with rose. In order to test mine severely, I put all the bulbs in one large pot, in turfy loam, and placed them outdoors in the shade. I had several spikes, two of them having several branches, and one 4 feet in height bearing fifty-four flowers, the largest of which were 3 inches across the segments, and 3 inches in length. Speaking from memory, it is the first instance I have seen of a snow white Irid. In old lists the species enumerated under *Watsonia* are various, and many of them mentioned as coming from the tropics, not *Watsonias* at all. One of the lists includes *Anthericum Liliastrum*."

TREATMENT OF SOILS AND MANURES.

THE tests that I gave on page 173, to prove the quantity of soluble matter or salts, give so far a fair and good test of what is really ready for plant life, and the different processes I gave also proved what could be made soluble by cultivation. Metallic elements in combination with oxygen form bases, and bases combined with acids form salts. This is the form that most of the plant foods take in the earth. Some of the salts are more soluble than others. I am convinced that it is of little importance whether the salts are soluble or not, and it is a surprise to me that most of the manure manufacturers should waste so much time and money in making most of the ingredients soluble, when the plant has the functions for making all insoluble salts soluble.

As plants of different kinds require different salts, and more of them than others, it is necessary for the gardener to make the best use of what he has by him. This is one reason I have said so much against artificial manures, that the majority do not know the requirements of the plants and the deficiencies of the soil, and it is a thorough knowledge of these two things that all gardeners and farmers should cultivate, so as to make the best use of manures, whether artificial or otherwise, not to waste on one piece of ground what is useless, and what would be beneficial upon another.

I will suppose for the present that the requirements of the plants are understood, and not the resources of the soil. Manure of the sort to suit the plant may be lavished upon the ground already rich in the particular elements required.

In other instances the soil may be rich in some elements to suit certain plants, yet the ground may be planted with some crops that require more of a different element, while plants requiring those elements present may be planted on another piece of land very poor in them. If this knowledge is promoted thousands of pounds would not be wasted, but placed where required and in proper quantities.

If the manures that are soluble are used with that knowledge, and also with the knowledge of when to apply and store them, it would take a great deal of responsibility away from those that make and recommend them. I have known superphosphates used by the ton on land full of calcium and phosphorus, and had good farm manure been used and the land well worked a balance might have been at the bank instead of the reverse, and when we consider that a thousandth part is all that is present in the dried plants, does it not seem absurd to waste so much on phosphorus?

It will be as well to give a few hints as to the manures, &c., recommended by me, the crops that they suit, and the different soils that require them. As Potatoes are one of our first crops in the garden, a good crop of fine Potatoes is of the first importance, though technically not one of the greatest difficulty. Potash forms an important ingredient, sulphuric acid, phosphoric acid, and a smaller quantity of magnesia. If the farm manure is treated as directed by me in my first article, and a good dressing is given the soil, together with a few barrowloads of the blood mixture and ash of waste heap, the soil will be prepared with sufficient food to produce an excellent return of Potatoes. To a certain extent the parent soil acts a prominent part in the quality of the production, and if it is a stiff clay the best means to obtain good Potatoes in quality is to ridge the land, which acts as a drain for all the surface water; of course, the land itself should be permanently improved, which if done in a proper way would soon enable the gardener to plant in good arable land. The ridge would have the opposite

effect in dry weather. Good light soil suits Potatoes, but failing that the best use must be made of the others by judicious treatment.

A similar manuring of the soil will suit Beans, as potash plays first part with over 40 per cent., and there is over 30 per cent. of phosphates, but if the soil is not calcareous an addition of a small quantity of gypsum will supply the required quantity of sulphuric acid and lime. Parsnips have over 36 per cent. of potash, 18 phosphates, 11 of lime, &c. The same dressing will do for Parsnips with the addition of more clay or lime. Carrots, phosphates 10 per cent., potash 32, soda 13, sulphuric acid, &c. As more soda is found in the ash of Carrots than in any of the foregoing, the ash of marine plants (Seaweeds) or the cesspool water or mud that drains from the kitchen or laundries will supply the extra quantity of sodium if not present in the soil. Cabbages contain in their ash phosphates 13 per cent., potash 12, lime 20, sulphuric acid 21, soda 20, &c. This analysis shows the necessity of preserving all our manures in a proper or semi-dry state, and all the refuse from the garden should be mixed with it. There may be enough of most of the mineral elements in the soil for all practical purposes, but to be doubly sure it is as well to preserve all that is in the refuse and manure. Beet contains potash 24 per cent., soda 19, salt 24, phosphates 4, &c. If a good dressing of clay can be given to very light lands it will be found to supply a great want for this crop, with a fair dressing of ordinary manure or agricultural salt will not be a waste. Turnips have in their ash phosphates 10 per cent., potash 28, salt 10, and lime 23. This proves that only two of the principal garden crops require any lime in large quantities, and if a dressing of lime or chalk is given for the benefit of Parsnips and Turnips together with the ordinary dressing sufficient lime will be left in the soil for all the crops to follow till one or the other is again planted or sown there. The dressing for these crops must depend a great deal upon the nature of the soil. It would be a waste of time to put lime upon the soils already rich in them, and the only cases where it is required is on light soils full of humus and stiff clays to improve its texture. When we consider in some instances the ash is only half the per-centage of the plant, the quantity that need be supplied must be small, and more so when we know that ash left is not when in the plant capable of being thrown off into the atmosphere in a volatile state, but all the mineral that constituted the foundation of the plant remains fixed in the fire, and when we examine the soil and find it consists largely of mineral or inorganic elements it is not surprising that those who work the land most get the best results independent of what is put into it.

I was on one estate seven years, and during that time not 1 lb. of artificial manure was introduced, in fact no manure of any kind from outside, and the only manure procurable was long straw that horses had slept on once or twice. I now know to a certain extent that it was useless, as the soil was full of silica and did not require it from that source. This straw was mixed with leaves, and the cesspool water, which was the colour of stout, was thrown over till it presented the appearance of well trodden farmyard manure. There was plenty of it, and it was supplied to the land in good dressings. Finer crops of all sorts of vegetables and fruit could scarcely be produced. I may say the same with all classes of indoor plants, which receive nothing more than the liquid and a little soot. Finer Crotons, Dracenas, in fact all stove plants, with Pelargoniums, Strawberries, Cinerarias, Calceolarias, Chrysanthemums, and all classes of indoor plants could not be seen anywhere, and Peaches and Grapes were excellent. On another estate any quantity of guano, clay, bonemeal, Standen's, and almost every kind of manufactured manure, with nitrate of soda, sulphate of ammonia were used, yet taking all round nothing like the return was given notwithstanding all this expense; in fact, if the supply was not constant a difference in the plant was perceptible at once. Some of the soils that gardeners have to use are more often than not procured from some out-of-the-way corner, and are practically barren. This soil needs well mixing with something that has been exposed to the air by constant working, and with some manure rich in nitrogenous matter. Plenty of leaf soil is one of the finest ingredients to mix with all soils, as it would supply most of the elements required.—G. A. BISHOP.

I THINK Mr. Bishop is unscientific and inconsistent in his treatment of this subject, as I may be able to explain, though I do not intend to take all his statements and reply to them seriatim. In the first place he classes soils as active, dormant, and inactive or latent; then goes on to say the larger part of the soil being inorganic proves that the mineral elements are far in excess of that required by plants, and that it is possible to exhaust them by continuous cropping without a sufficient return of these elements. How he can come to these conclusions after having previously stated that one part of the soil is a mass of elements in a latent

state I am at a loss to know. As these latent elements, according to Mr. Bishop's own explanation, cannot be absorbed by plants, therefore the farmer must have always a certain amount of plant food in the soil, latent or otherwise. Moreover, in the same paragraph he refers to a farm where the land has had no return of the constituents carried away from it, yet for the last forty years it has produced from 20 to 24 sacks of corn per acre each harvest. I should be glad if Mr. Bishop could inform me where these inorganic substances had been obtained for the growth of the Wheat, seeing that by his theory the continuous heavy cropping of the land would have thoroughly exhausted the plant food years before some of the later crops were gathered, Wheat being one of the most exhaustive of crops to the soil. Upon the strength of this experiment he appears to recommend a course of working and tillage operations that would serve in the place of adding manures. Surely this is not the same writer who in the early part of his paper says, 'Land is exhausted by heavy cropping without returning any of the plant constituents.' If so, I will leave the reader to judge if it is consistent with his theory of exhaustion of soils.

I quite agree with Mr. Bishop in his endeavours to call all the natural agencies to the cultivator's aid, and to employ all the waste materials, both vegetable and animal, for improving the fertility of soils, yet I think his disregard of artificial manures is presumption as well as the assumed scientific manner in which he attempts to treat the subject. With regard to the letter by Mr. Tonks, p. 174, though I agree in most points with his treatment of the scientific part of the subject yet I think the idea of his accomplishing such striking results from the handful of properly compounded artificial manure would be something like populating a large town with a few important families, as he would be unable to tenant all the houses, so in the same manner would he be unable to get the plant food thoroughly distributed in the soil. We must remember that one advantage of farmyard manure (though apparently a disadvantage) is its bulky nature. In consequence of its bulk the fertilising ingredients are able through the medium of the straw, &c., to be diffused equally through the soil. Also this manure has important physical as well as chemical action in the soil. Artificial manures can never stand in the place of good stable and cow manure, but their value is abundantly proved when supplementary to farmyard manure to show any practised man that its use is highly profitable and in some cases almost indispensable. Nevertheless, the subject affords ample scope for practical and scientific discussion, and also one that is interesting to all engaged in the cultivation or management of land.—W. S., *Lancashire*.

INSECTS OF THE FLOWER GARDEN.

(Continued from page 86.)

CATERPILLARS, even if handled so as to annoy them considerably, rarely attempt to defend themselves by biting, but one of the few that will try to grip the human skin is that of the buff-tip moth (*Phalera bucephala*); it is not, however, able to do this. One of these caterpillars is not unfrequently to be seen on a flower bed bearing a hungry aspect, and suffers death as an insect pest (we cannot say unjustly), for the species does much damage to trees, which they sometimes strip till the trees appear as bare in August as they might be in October. Often feeding in companies upon Limes, Elms, and other trees planted along walks or avenues, they are apt to be dislodged by high winds, and then wander off over beds and borders, seeking a change of food or a place where they can enter the pupal state. The chrysalis, which is dark brown and curiously spiked at the tail, may be detected now and then amongst the surface earth, and should be destroyed. An insect which appears to have been getting common lately, the figure-of-8 moth (*Diloba cæruleo-cephala*) has been occasionally taken on garden Roses, but it prefers the Hawthorn or the Apple. The mother moth lays its eggs in September at the base of a twig; the caterpillars feed during May and June. They are of a peculiar smoky green studded with black warts and having small bluish heads. Evidently they are regarded by birds as choice morsels, which is fortunate for us. Passing on to the large family of the Noctuidæ we have before us a group of moths notable because of their liking for sweets, hence they come eagerly to our flower gardens in the dusk of summer and autumn, drawn thither by the attractions of fragrant species, in which they seek for honey, not always successfully. Certain kinds are specially resorted to, such as the Honeysuckle, Petunia, Phlox, Stocks, Peas, and some *Pelargoniums*. That they perceive at a long distance off any odour which is appetising is an unquestionable fact, however it may be explained. I have seen myself instances where sugar was being used to entrap moths, and species turned up which must have travelled more than a mile from their known locality. Only a few

of these moths feed up in gardens while in the caterpillar stage, and they may be accounted welcome visitors, because, as I have previously shown, their doings assist the fertilisation of some flowers.

The conspicuous caterpillar of the grey dagger moth I have taken off Roses, and it will now and then turn up in gardens, feeding upon various shrubs. It grows during August and September; the moth (*Acronycta Psi*), which is notable for markings, which are supposed to resemble in shape either a letter of the Greek alphabet or a dagger, emerges in the following spring. Like others in the genus the caterpillar is slightly hairy, some of the hairs being long, others short, striped from head to tail with black and yellow, having also some red and white spots, but specially distinguishable by its two humps, one near the head, which is long and slender, the other at the short and flattened. This is one of those caterpillars best dealt with by handpicking; it appears to escape birds, nor is it much troubled by the attacks of parasitic insects. The caterpillar of a moth in this division, possessing the odd name of the brown-line bright eye (*Leucania conigera*) from its singular markings, is of some service to the gardener. Though it can eat several grasses its preference is for the couch grass, a too well-known nuisance, upon which it feeds freely at night in the spring, hiding itself during daylight.

We come next to a species, the caterpillar of which I have several times had brought to me by gardeners, who appeared to regard it as somewhat of a curiosity, and different to the common herd of these devourers. The dot moth (*Mamestra Persicariæ*) is an insect allied to the too abundant Cabbage moth (*M. Brassicæ*), but though its caterpillar may occasionally be noticed in the kitchen garden and orchard too its favourite haunt is the flower garden. If the moth be noticed on palings or hovering at flowers in the summer it should be captured; it is conspicuous for the spot of pure white with a central cloud, which shows up on the wings of dark brown. The caterpillar is nearly 2 inches long when fully grown; the colour varies from green to brown, the head being pale and shining, from head to tail there extends a series of V-shaped markings, the points of these are directed backwards, the last ends in a roundish hump. If alarmed it immediately quits the food plant and rolls into a ring. In habit it is solitary, feeding on many species of plants. I have seen it devouring Stocks eagerly, and from finding it on *Pelargoniums* in houses as well as in beds I infer it is partial to those plants. The allied species referred to above and named from the Brassicas it so persistently infests is not, however, limited to these vegetables. Its dingy but very variable caterpillar also occurs amongst our flowers, mounting sometimes to the lofty Dahlia, and at other times condescending to the humble Marigold. In turning over the soil at the end of the season the brown chrysalis is frequently unearthed; it is one of the objects for which poultry scratch eagerly.

The Turnip moth (*Agrotis Segetum*) bears a popular name that indicates certainly one vegetable the caterpillar frequently attacks, but it fails to give an idea of the general destructiveness of the species: in fact, the late Edward Newman believed it to be a caterpillar which would eat any plant were it but tolerably succulent. In June the greyish brown moths are on the wing, in appearance bearing much resemblance to others of the same group; but their habit of settling upon the ground to deposit their eggs serves to draw our attention to them, and this they will do on the flower beds as well as elsewhere soon after dark. About their proceedings this entomologist remarks:—"Very often in a bed of China Asters the leaves of a plant here and there will be found withering, and you become aware it is dying, but cannot tell why. Just examine the stem where it enters the earth and you will find it completely decorticated; the circulation of the sap has been prevented, hence life is destroyed. This is the work of *Agrotis Segetum*; you pull up the Aster to find the enemy, but fail; his depredations were committed in the night, and before daybreak he has wandered away several inches or even feet." This propensity it has for attacking plants at the foot of the stem makes it a most injurious caterpillar, and so, too, its habit of committing devastation amongst seedlings. For the protection of these the usual applications, such as lime, soot, and ammoniacal liquor diluted, which check the progress of surface feeders generally, may be tried when the caterpillars are hiding in the soil. They are difficult to kill, and what makes matters worse they continue to gnaw the roots of herbaceous plants throughout the winter. This caterpillar is plump and glossy with a small flattened head, behind which is a horny plate; the body is brown dotted over with darker points and faintly striped. Its digging operations are aided by powerful muscles in the legs. In the genus *Agrotis* there are several other moths, the caterpillars of which feed upon garden weeds, and to some degree they may be deemed useful, for few gardens can be kept quite weedless.

The caterpillar of the great yellow underwing (*Tryphæna*

pronuba) is sure to be found amongst some of the plants in the flower garden when there is any extent of ground adjacent which is devoted to vegetables. It buries deeply during the day, but comes forth at night, feeding upon bulbs or tubers if it can obtain them, and lives in this way from autumn till early summer. Its relative, the lesser broad-bordered yellow underwing (*P. janthina*) is fortunately not very abundant, for it kills some of the plants on which it feeds by eating through the stems. When it appears in a garden the object of its attack is mostly an *Auricula* or *Polyanthus*. The moth which emerges in the summer is a beautiful insect, though of moderate size.—ENTOMOLOGIST.



EVENTS OF THE WEEK.—To-day (Thursday) the Vegetable Conference at Chiswick will be resumed at 2 P.M., when the papers to be read will be as follows:—On "Food of Vegetables," by Mr. J. Wright; on "The Improvement of Peas during the last Quarter of a Century," by Mr. T. Laxton; on "The Improvement of Potatoes during the same Period," by Mr. A. Dean, and "How to Maintain a Supply of Vegetables for Family Consumption throughout the Year," by Mr. J. Smith, Mentmore. The usual sales will be held by Messrs. Protheroe & Morris and J. Stevens.

THE WEATHER.—Several slight frosts have completed the damage to tender outdoor plants commenced on the 17th inst. In the low-lying districts around London Beans, Dahlias, and Vegetable Marrows are totally destroyed, and the leaves of many trees are falling fast. The days have generally been bright and warm, and favourable to the ripening of the fruit still hanging on trees. Mr. T. H. Slade writes from Stockwood Park, Luton, "On Tuesday heavy rain fell throughout the day, a cold wind prevailing, but on Wednesday it was much brighter. We registered 5.3° and 5° of frost on the 17th, 18th, and 23rd respectively."

THE abundance of WASPS has been remarkable, many persons having been stung, but with no serious result; still, I am of the view which I have long maintained, that the wasp has no greater inclination to sting than has the bee as a tribe, only the wasp more frequently comes into collision with humanity, owing to its desire for sweets in general. Flies of the ordinary species have been far below the average this autumn in point of numbers, and possibly we have to thank the wasps for this. It is certain they seize upon flies and a variety of other insects, which is some set-off against the mischief they do to fruit, and the annoyance they cause to many tradesmen.—ENTOMOLOGIST.

THROUGH the exertions of the leading members of the WAKEFIELD PAXTON SOCIETY that town has recently secured a recreation ground of about 3 acres, which was recently opened to the public, and it is expected that other open spaces will shortly be obtained there.

MR. J. ROBERTS, The Gardens, Tan-y-Bwlch, Merionethshire, sends two small cones of *EUCALYPTUS GLOBULUS* from trees nine years old from seed, and wishes to know if it is not rather unusual for such young trees to produce seed.

GARDENERS' ORPHAN FUND.—We are desired to state that the Chiswick Gardeners' Association will give a concert in aid of the above Fund at the Vestry Hall, Chiswick, on October 31st.

MR. W. HALL, Secretary of the Brixton, Streatham, and Clapham Horticultural Society, writes:—"Herewith I beg to inform you that the Society's next Exhibition will be held on Tuesday and Wednesday, November 5th and 6th, and not on the 12th and 13th, as previously announced. This alteration has been made to prevent the Society's Exhibition clashing with that of other societies." The alteration does not seem to have quite effected the intended purpose, for it is to be held on the same days as the Royal Horticultural Society's Conference and Exhibition at Chiswick.

I SEND you a sample of ONIONS, the name of the variety I do not know. The seed was given me eight years ago, and I have always planted a few and saved seed, having invariably had sound Onions of the preceding year when the current year's crop was harvested. The

enclosed are samples of their keeping qualities. My mode of procedure is to pull them as other people do, and dry them a few days on the ground, but take them in if rain threatens. When perfectly dry we tie them in bunches of from eight to fourteen, according to size, and remove all the loose peel, laying them on boards in my potting shed. In a few weeks another skin is often loose, and in ropeing them, as we call it, that is removed. I thank you for all the information received from week to week in our Journal. I am amongst the oldest subscribers, but not the oldest. The first number I never saw, but I began with No. 2, and have continued ever since.—ECCREMOCARPUS. [The Onions received were small but remarkably well kept. We hope you will continue reading the Journal for some years.]

GILBERT'S SURPASSE TOMATO.—This has proved a really first-class variety for outside work here. Last year was a very bad one for outside Tomatoes, and Surpasse was the only one that ripened with us. This year it has done remarkably well, producing large clusters of fine fruit, beautiful shape, and very heavy, having very few seeds. Another season we shall use it more extensively. From some cause it has not done so well with it under glass; perhaps it requires more air than most varieties, but as an outdoor Tomato it is excellent.—S. T. W.

HAVING about 700 feet run of glass devoted to PEACHES and NECTARINES, under my charge, will "Utilitarian" allow me to give my opinion with regard to his fruit falling? In my early house at the end nearest one of the doors is planted an Elruge Nectarine, and this year the fruit commenced to shrivel and fall at the top of the tree. But luckily I noticed it in time, and attributed it to cold draughts and insufficient water at the roots, an opinion our head gardener fully endorsed; so after watering copiously, and ventilating carefully, we gathered 400 fine Nectarines from this tree. No doubt the sunless season of 1888 was very trying for Peach growth.—FOREMAN.

PEA WILLIAM HURST.—At the commencement of the sowing season my friend Mr. Easty kindly sent me a large packet of seed of this variety, and strongly recommended it for early sowing. Having sufficient dwarf Peas in stock, I decided to keep it for late sowing, and am well pleased with the result. We sowed the seed during the first week in July on Celery ridges, but find we did so fully a fortnight earlier than we need have done. At the present time we are gathering good dishes of Peas, the pods being well filled, colour and quality also good, and if the birds can be kept off several good pickings will be available during the next fortnight. William Hurst only attains a height of about 15 inches, and is very productive. No stakes are needed, nor for any other dwarf or medium height variety sown late.—W. I.

CATERPILLARS AND FRUIT TREES.—On page 256 reference is made as to when we put the grease bands on fruit trees. By looking at my note book I see we commenced on the 20th October, 1888, but as previously stated in the Journal our fruit trees were more seriously attacked by caterpillars than ever before. During the time the grease bands were fresh and sticky the female winter moths were depositing enormous numbers of eggs on the trees. To account for this I think the winged male moth must have conveyed the wingless female over the obstacle to her ascent. Great numbers of both male and female moths were caught in the grease, yet in spite of that the foliage and bloom was destroyed on nearly all the trees. A timely warning is given to "R. R."—viz., not to apply grease to the bark. Our trees had paper bands thickly smeared with ordinary cart grease tied round them, and where the grease touched the bark it appears now as if canker would ensue. My employer and I are not inclined to try the experiment again. Good cultivation, perfect cleanliness, and keeping the soil constantly moved about the trees, so as to give the insects no rest in the ground, and poultry not overfed running about, will in the long run prove as good a remedy as most.—S. T. WRIGHT, *Gleyston Court Gardens*.

LIQUID MANURE IN WINTER.—The same correspondent writes:—"I think the leader in last week's Journal the best I ever read. Mr. Hollingworth of Woodseat, well known as a Grape grower and exhibitor, acts on the system with his Vines. My old master, Mr. McPherson, also acted on it, and I do myself, and know how well it answers." It may be added that the writer of the above note is an entire stranger to the writer of the article referred to.

GAS LIME AND THISTLES.—I have recently had a piece of ground given over to me, which is situated at some distance from the gardens. I intend cropping half of it with Potatoes every year to maintain the supply until November. Our garden being an old one Carrots and Parsnips are, as a rule, destroyed by maggot

every year. I therefore propose devoting the remaining half to these crops. There is an enormous lot of Thistles in the ground. Clearing them out of the ground is out of the question. I am led to wonder if gas lime would kill them. If so I should be glad if any of your correspondents that may have had any experience with gas lime would tell me when and at what rate to apply it. If gas lime will not kill them is there any other effective remedy? If so I shall be glad to know of it. The ground will be cleared in the course of a fortnight, and of course will not be planted until next March. It is about an Irish acre in extent. Some Potatoes I have in it this year are badly scabbed, otherwise the quality is good. Would gas lime remedy this defect? Would any manure be required in addition to whatever application is suggested?—HANDY ANDY.

— THE past summer in NORTH WALES has been a trying one for the vegetable gardener. Enemies on all sides have had to be combated, and that in no faint-hearted manner. The season commenced with an invasion of slugs, which attacked almost anything that was green. Jerusalem Artichokes went down before them, and it was only by the greatest care that seedlings could be preserved. Peas, especially early sorts, germinated badly, and what did come through the ground, in spite of repeated dustings of lime and soot, were made all the thinner by slugs. We have had to sow about twice the quantity of seed to keep up the supply that we should have done in an ordinary season. Veitch's Perfection and Dickson's Favourite are the only sorts that have really done well. During the latter part of May, and all through June, we did not have a single thunder shower, and it was only by mulching and indefatigable watering that Peas could be kept bearing. Mildew attacked them in the earlier stages of growth, and spread more rapidly than in any season I can remember. Last year being so unfavourable to the maturing of seeds in general, undoubtedly impaired the vitality of Peas; hence the fungoid attacks which have been prevalent in so many parts of the country. Onions in many gardens this year are next to a failure, especially when seed was sown early. In our case we reckon to have about a third of a crop. The ground being in good condition the seed was sown at the end of February. The cold, sunless weather which followed, with seed not too well matured, was all against its germinating. I am afraid that many of us after the turn of the year are too anxious to get seeds in the ground that would be better left for another month in the drawer. Parsley we sowed half a dozen times, with the result that we did not have two dozen plants. Our present supply is derived from the previous year's seed, which as a final resort we sowed in heat and transplanted, but was long in coming through the ground, and the rows are patchy.—D. G., North Wales.

CHARACTERS IN BRITISH FERNS.

[Read before the Sheffield Floral and Horticultural Society by Mr. John Eadon.]

THE lovers of Nature are constantly brought into contact with the pleasing phenomenon of variation. It is generally accepted that variety is charming, and it is my intention to show how far, and in what way, this charm of variety can be claimed by our British Ferns. For beauty and gracefulness in foliage we have no other class of plants to compare with them. The fixed characters of British Ferns are divided into eight classes—namely, 1, Plumose and Frondose. 2, Divided and Decomposite. 3, Imbricate and Crispate. 4, Lax and Flexuose. 5, Deltoid and Brachiate. 6, Cruciate. 7, Interrupted and Deficient. 8, Crested and Ramosc.

The eight characters named above are all to be found in the following four species—namely, *Athyrium Filix-fœmina*, *Blechnum spicant*, *Polypodium vulgare*, *Polystichum angulare*.

There are seven other species in which one to seven of the above-named characters are to be found:—*Adiantum Capillus-Veneris*, *Allosorus crispus*, *Hymenophyllum Wilsoni*, *Lastreas*, *Osmunda regalis*, *Scolopendrium*, and *Pteris aquilina* or common Brake.

The last is the most unlikely plant we should imagine to exhibit any special characters; but I have seen it crested and ramosc, imbricate and crispate. The *Osmunda regalis* is not given to much change, but there are several varieties of it, the most to be admired being the crested, of which we have more than one type. *Polystichum Lonchitis* has been found crested. *Allosorus crispus* has also produced a crested variety. There are also some beautiful varieties in the *Asplenium* class. *A. marinum* has given us a grand plumosum, also crested and ramosc varieties. *A. lanceolatum*, *A. nigrum* and *A. trichomanes* have each produced good varieties.

I will now bring before you some of the beauties referred to in Class 1—namely, Plumose and Frondose. The first to claim our attention is the lovely *Athyrium Filix-fœmina* *Kalothrix*, a name expressive of the fineness of its divisions, and meaning beautiful hair. The late Colonel Jones, when referring to it said, "It is, perhaps, the most delicately beautiful of all Ferns." The next is a good plumosum of my own raising from a plant which I found, and there are also many others;

but we must content ourselves with referring to one or two in each class.

The plumose character is represented in the *Lastrea Filix-mas* group by the beautiful plant, *L. Filix-mas* *Bollandiæ*, a good variety, which is said by some to be barren, like many others of the plumose class, but the old plant that I possess produced spores last year and again this.

The next to be noticed are the most beautiful, and at the same time most useful, *Polystichums*. The pulcherrimums in the *P. aculeatum* division are among the most charming of our native Ferns. There are also several in the *P. angulare* division. A gentleman named Mr. Moly has two varieties of this beautiful plant, and one is variegated. I look on these plants as worthy to be classed among the gems of our British Ferns. The next is *P. angulare plumosum* *Wollastoni*; it is a fine old plant. I have grown it for a number of years. Here is *P. plumosum* grand. The late Colonel Jones, from whom I received it, said it was "a gem of the first water," and I endorse that opinion. But good as the above are, we have one much in advance of them. I refer to *P. divisilobum plumosum densum*, raised by the late Colonel Jones. The opinion expressed by Mr. C. T. Druery is that this Fern is the perfection of division and delicacy. It has been called the *Todea superba* of British Ferns, and deservedly so. There are many other beautiful plumose and frondose varieties. There is a grand plant called *Polystichum cristatofoliosum*. Another, called *P. divisilobum decorum* by Colonel Jones and distributed by him, is also a lovely Fern. *P. conzestum polydaetylum* was raised by Mr. E. F. Fox, near Bristol, from whom I received it last November. It is a fine plant of the foliosum section.

There are some fine plumose plants in the *Polypodium* class. *P. cambricum* is an old variety, but very good. There is also another of the cambricum group, which, as some say, is far better than the last. This is called *P. Barrowi*. The most plumose of them all is called *plumosum* *Hadweni*. It was found in Silverdale.

Scolopendrium crispum varieties are fine plumose plants; also the undulatum varieties, several of which I have collected myself.

In the cruciate class the first I will mention as representing this character is *Athyrium Filix-fœmina* *Victoriæ*, a plant well known to most growers, and needing no comment from me. *Polystichum aculeatum cruciatum* was raised by Mr. E. J. Lowe from a cross with *P. angulare cruciato-multifidum*.

The interrupted and deficient character is shown by *P. angulare* var. *lineare*, which has been repeatedly pronounced to be a grand plant; but there are many in this division which are anything but attractive.

The next and last class of character to notice are the crested and ramosc Ferns, which is, as some of you are aware, form a very extensive section of our British varieties, for out of the forty-three species of British Ferns we have twenty that have produced crested plants, and in some of the classes the crested section is very strong; but we can only briefly refer to a few. A little gem is *Athyrium grandiceps*, a beautiful and very densely crested variety. *Athyrium pericristatum* (Jones) is small but very good. A young plant of my own raising of the *A. Friselliæ* section is much better crested than most I have noticed of its kind.

The fine old *Lastrea Filix-mas* var. *cristata* is too well known to call for any comment here. Of *L. grandiceps* and *L. polydaetyla* there are a few very good varieties; also a ramo variety, or two—*L. ramosissima* and *L. ramosissima*.

I will next refer to one or two of the *Polypodiums*. In this class there are many beautiful crested and ramosc varieties. Here are two—*P. cristatum* and *P. grandiceps*, both very good and distinct. A few of the best *Polystichums* are *P. grandiceps* (Moly), *P. latifolium cristatum* (Jones), *P. polydaetylum splendens* (Jones), and *P. polydaetylum* (Wollaston), both the last being very choice.

I will now conclude with noticing a few varieties of *Scolopendriums*. I have one of the dwarfiest, the densest, and most delicate in its divisions that I know, and with me it is a free grower; but it must be kept under a bellglass to do well. I also found one last October, and referred it to the late Col. Jones, who advised me to name it *S. trifondosum*. I think it is likely to establish itself as a very good variety.

[Mr. Eadon fully illustrated his remarks with a collection of plants and fronds, for which, as well as for his interesting and able paper, he was heartily thanked by the meeting. The chair was occupied by Mr. Henry Davy, who is also, like Mr. Eadon, a successful and enthusiastic cultivator of British Ferns. The subject of Mr. Eadon's paper, however, being of a special and technical character, did not provoke any discussion. One question was asked, What did he consider the main causes of the changes from the normal varieties? To this Mr. Eadon replied, That it was an inherent principle in Ferns to sport. He also was fully persuaded that we were entering on a new era in Fern culture, as it was now thoroughly understood how to raise new varieties by crossing. But many of the best varieties now in cultivation have been found wild. Different localities produce different forms of certain Ferns; for instance, in one part of the country a gentleman found thirty *Scolopendriums*, all varieties of *crispum*. This gentleman thinks there is something special about the districts which produce these varieties. On the limestone in the neighbourhood of Auston, a village about twelve miles east of Sheffield, Mr. Eadon found special kinds of *Scolopendriums*. In some places you can never find anything different from the normal types. The English lake district is a prolific field for the Fern collector, many crested and plumose varieties having been found there. In some parts of England many varieties of the common Bracken (*Pteris aquilina*) can be found, but nothing different from the ordinary variety can be found in South Yorkshire or the neighbourhood.

The special Polypodies have been found chiefly in the lake district, except *P. cambricum*, which was found in Wales. The majority, however, of the best varieties of Ferns are now raised by crossing, and one of the best hybridisers was the late Col. Jones of Clifton, Bristol.]

STRAWBERRY GROWING.

OBSERVING the remarks of "W. S." on my few notes on Strawberries, I should wish to add a few words to what I previously wrote. I had not overlooked Loxford Hall Seedling, but I only fruited it one year at Totham, and then from very weakly runners, and in moving I lost my stock. Having years ago taken the advice of the American sage never to prophesy until I know, I did not feel justified in speaking positively on the merits of Loxford. It is the neatest grower I ever saw, and has few runners, whilst the few fruit I gathered were very large, late, and of good flavour. I should judge it to be admirable for exhibition, and at some convenient season I must procure plants and test the variety thoroughly, after which I shall be able to record my experience for the benefit of others.

I had the privilege of seeing Mr. Iggulden's crops of Strawberries on yearling plants, and they were plentiful, large, and exceptionally early, and it was mainly for earliness, Mr. Iggulden informed me, that he pursued this system. Speaking yesterday to a market grower who formerly had great opportunities of experience in the gardens of a true "horticulturophile" (if I may be allowed to manufacture a word), he stated to me that the annual system is far and away the best, and the only course he would pursue if he were a Strawberry grower.

I omitted to state that I only apply the cod potash guano when the weather gives me some assurance that it means to give a good down-pour for a day or two, for the manure not being easily dissolved it is worse than useless to apply in dry weather.—H. S. EASTY.



SOME OF THE ANGRÆCUMS.

THE genus *Angræcum* was established in 1822 by Aubert du Petit Thouars, to include certain species of epiphytal Orchids found in East and West Tropical Africa, Madagascar, and the adjacent islands, and in a work published by that botanist several of the species now in cultivation were described. It was then believed that the geographical range of the genus was very limited, but species have since been found in Japan and the West Indies. Their headquarters are Western Tropical Africa, from Sierra Leone to the River Gaboon, the opposite side of the great continent about Zanzibar, in Madagascar, the Comoro Islands, Bourbon, and Mauritius. They are essentially heat and moisture-loving Orchids, and with the exception of the Japanese *Angræcum falcatum* they need the warmest compartment of the structure devoted to such plants. Being epiphytal in habit the majority require to be grown in baskets or on blocks of wood; but those of vigorous habit, such as *A. eburneum* and *A. sesquipedale*, are usually grown in pots with abundance of potsherds as drainage, good fibrous peat and sphagnum, or the latter alone, that moss also being employed when the small forms are grown in baskets or on blocks. As with all Orchids of similar habit and from similar climates, abundance of water is required during growth, and a less amount when at rest; in other respects they may be treated like most of their allies. A few descriptive notes upon the best of the species may be of interest, and will serve to indicate the chief characteristics of the genus.

One of the most remarkable Orchids known is *A. sesquipedale*, and whilst having the largest flowers in the order it is also unquestionably the most handsome in its genus. Such qualities entitle it to some consideration, and several points in its history are also invested with peculiar interest. It is, perhaps, the best known of the *Angræcums*, for it is found in the majority of moderately large collections of Orchids; and very deservedly is it so popular, for the vigorous habit of the plant, the dark green distichous leaves, and the great ivory white flowers render it worthy the attention of all growers. In the ordinary type of the species the flowers are about 6 to 8 inches in diameter, the spreading sepals and petals imparting a star-like appearance to them, and the spurs are from 10 inches to 1 foot in length. Messrs. Veitch & Sons have a grand variety, which is, I believe, named *superbum*. It is greatly superior to the ordinary form, both in the size of the flowers and the purity of the white. In both the flowers are borne on a moderately short peduncle, and are arranged in a racemose manner, but widely

spreading. They are produced during the winter months, and last in good condition for several weeks, the sweet Lily-like fragrance which the blooms possess rendering them additionally attractive, and a single specimen upon the stages of an Orchid house will fill the whole structure with perfume.

This species was one of those known to Du Petit Thouars in 1822, but it was about thirty-four years later when living plants were first brought to England by the Rev. W. Ellis, who found it in 1854 growing on the branches of trees on the margins of forests in the low and hot districts of Madagascar. A few years later a plant produced flowers at that traveller's residence, Hoddesden, when the plant attracted much attention owing to the peculiarity of its structure. Since that time it has been generally distributed; and on December the 10th, 1861, Messrs. Veitch & Sons exhibited a specimen at a meeting of the Royal Horticultural Society, when a first-class certificate was awarded for it. As regards the structure of this Orchid the chief peculiarity is the extremely long spur, which, though rarely exceeding a foot in length in cultivation, is said to attain 1½ foot in its native habitats, and from that character the specific name is derived.

Another of the strong-growing forms is *A. eburneum*, but not so remarkable as the one just described, though from its free-flowering habit it is one of useful *Angræcums*, especially as the flowers are produced at a time when the Orchid house is comparatively dull—namely, from December to February. Grown in pots excellent results are obtained, and several unusually fine specimens in some of the chief London nurseries, Kew, and elsewhere have been noted in this Journal at various times. The plant is of robust habit with long leaves arranged in a similar manner to those of *A. sesquipedale*, and it bears numerous erect spikes or racemes of large flowers, of which the roundish pure white lip forms the most conspicuous portion, the sepals and petals being narrow and of a greenish tint. Two varieties are known—one named *virens*, which has smaller and less handsome flowers than the species, but is rather more graceful in habit. Another, named *superbum*, is decidedly superior to the type in the size of the flowers, and is said to be one of the introductions of the Rev. W. Ellis.

The type is native of Madagascar, where it was found by Mr. Forbes a few years previous to 1830. It was also found in the Isle of Bourbon by another traveller. Specimens were introduced to the Horticultural Society's Gardens, where one flowered in November, 1831, from which a figure was prepared for the "Botanical Register," where it is stated that it was believed the specimen was the only one in the country. Twenty years later a much better figure was published in the "Botanical Magazine," prepared from a plant at Kew which had been received from Mr. Clowes.

One of the most useful is *A. citratum* which flowers freely, producing elegant pendulous racemes frequently a foot in length, with closely packed small creamy white or pale yellow flowers, which are nearly an inch in diameter, with spurs about 1½ inch long. The colour is very delicate, and it is to that the term "*citratum*" refers, and not to the possession of any marked fragrance as some have supposed. It is a charming little Orchid, and when suspended from the roof of an Orchid house its arching racemes are seen to the best advantage in contrast with the deep green foliage of the plant, and the rich colour of some *Dendrobies*, the glowing little *Sophrontis*, and the showy *Ada aurantiaca*.

Though *A. citratum* has not been many years in cultivation it was known to Du Petit Thouars, who described it in the work already referred to. It is a native of Madagascar, whence Messrs. Veitch obtained it nearly twenty years ago, and in their nursery it first flowered in March, 1865. In the following year a specimen was exhibited at Kensington by the same firm in a class for new Orchids shown in flower for the first time, when a prize was awarded for it. In 1867 a very good coloured engraving of it appeared in the "Botanical Magazine," and on February the 18th, 1874, the Floral Committee of the Royal Horticultural Society awarded a first-class certificate for the plant. It unquestionably merits a place wherever elegant Orchids are appreciated, and has now become a familiar occupant of collections.

Angræcum Kotschyi is another of the beautiful Orchids which Messrs. Veitch & Sons have brought into notice, and for which they obtained the award of a first-class certificate at the meeting of the Royal Horticultural Society, October 12th, 1880. It not only possesses sufficient attractions to render it a

worthy companion for the best of its genus, but the peculiarity of its structure is additionally interesting, and on the occasion named the plant exhibited received much attention. Like its allies, it is epiphytal in habit, being found on trees near Zanzibar. The shining green leaves are rather short and broad; the creamy white flowers being 1 to 1½ inch across, and produced in pendulous racemes about a foot long. Each of the flowers is furnished with a reddish-tinted spur 6 or 7 inches in length; but, unlike all other *Angræcums*, it is curiously twisted somewhat in the manner of tendrils. This is the peculiar part of the plant's structure, and has given rise to several opinions as to its probable utility to the plant. The Rev. G. Henslow, when describing the plants exhibited on the occasion named, referred to it, and hinted

and habit, being less strong in growth than *A. eburneum*, and more robust than *A. Kotschyi* or *A. falcatum*; but it thrives very well in a basket, and may even be grown upon a block, though the former system of culture is generally the more satisfactory. The plant is rather compact, with dark green moderately broad leaves, two-lobed at the apex, and arranged in a distichous manner. The flowers are about 1½ inch in diameter, white with a tinge of rose, each having a spur 2 inches in length; they are borne in long pendulous racemes, and possess a slight fragrance. Specimens were found by Mr. Bowdich when travelling in West Africa near Cape Coast Castle, and from his widow Messrs. Loddiges obtained plants more than forty years ago, thus first introducing it into English and probably to European gardens.

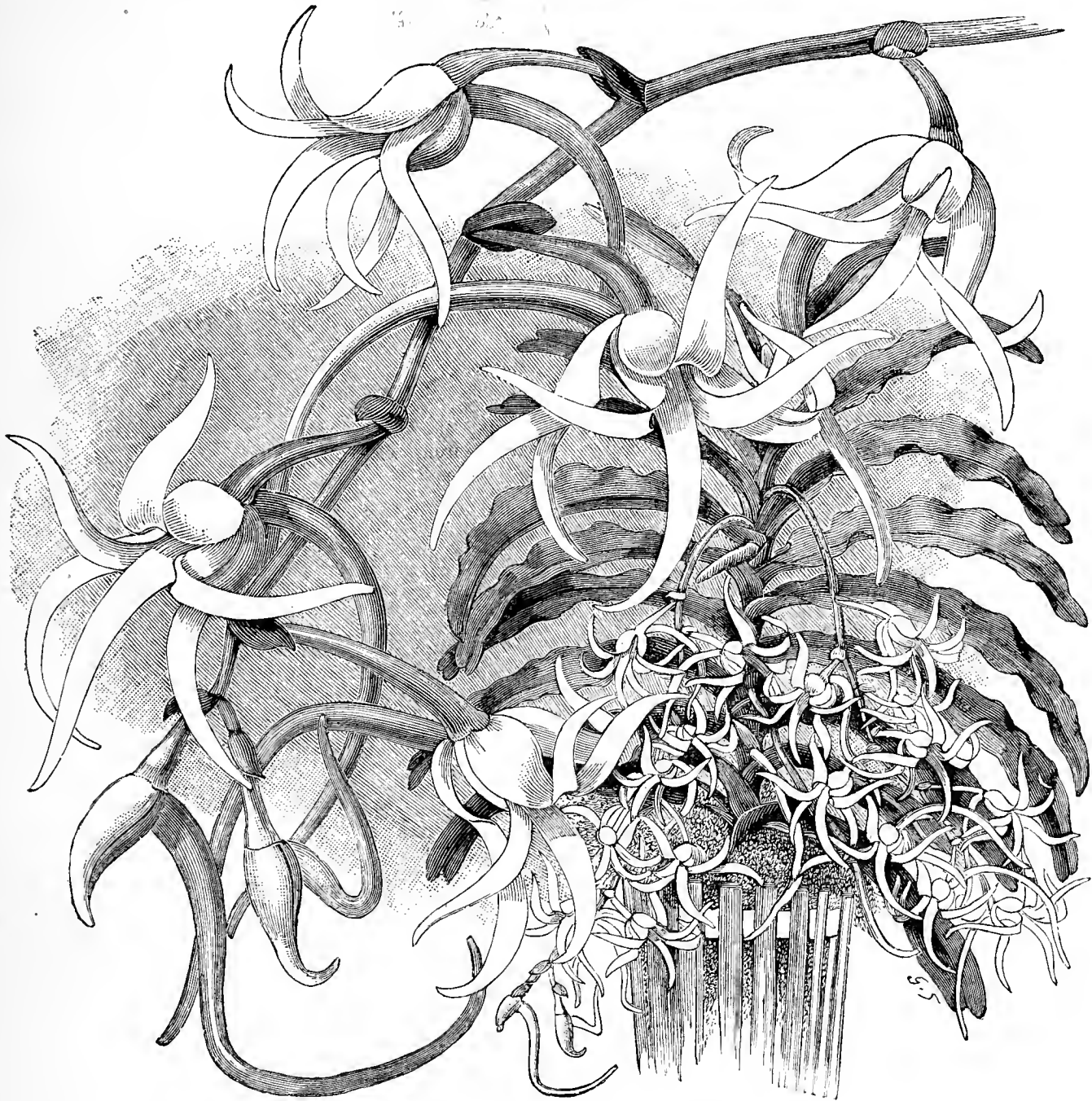


FIG. 35.—ANGRÆCUM CHAILLUNUM.

at the possibility of the spurs not only resembling tendrils in appearance but in function also, and that they may possess a certain sensitiveness which would enable them to twine round contiguous objects, thus supporting the rather heavy inflorescence. The surmise appears very reasonable, but further observations are required to substantiate it.

The plant is named in honour of Theodor Kotschy, who found it a year or two previous to 1840, and it has been since discovered by several other travellers. Some of the most recent that have been introduced were, I am informed, originally sent by Dr. Kirk to Gerald Waller, Esq.

A. bilobum is included in most of the large trade collections of Orchids, and occasionally seen in gardens where those plants receive more than ordinary attention. It is intermediate in vigour

It was a matter for surprise to some that *A. Chailluanum* should have been awarded a certificate at the meeting of the Royal Horticultural Society's Orchid Committee meeting on the 27th ult.; not because the plant is wanting in attractions, but because it has been known in this country for about twenty-three years, and cannot therefore be regarded as a new plant. There was a rule at one time to the effect that certificates would only be awarded for novelties, but difficulties cropped up at various times, when old but scarce plants were brought into notice, and it was considered advisable to make awards for such that possess undoubted merit. In this way *Angraecum Chailluanum*, though not particularly rare at the present time, was thought worthy of some recognition, and the exhibitor of a well-grown plant (Mr. Tautz, Studley House, Hammersmith) was accorded a first-class certificate, and is represented in the illustration (fig. 35).

The species was found in Western Africa in the Gaboon region by M. du Chaillu, and a plant sent by him to Kew first flowered in May, 1866. It is of comparatively small growth, with slender stems rarely exceeding a foot in height, the leaves 4 to 6 inches long and half an inch broad. The flowers are white, with long, tapering, acute, recurving sepals and petals, and the yellowish spurs are 4 or 5 inches long. The racemes are loose and drooping. This *Angræcum* requires the temperature of the East Indian or Cattleya house, and succeeds either in a basket or pot.—L. C.

THE LOWFIELD NURSERIES.

CRAWLEY was a famous place in the old coaching days—a busy Sussex town, the stabling and courtyards of the old inns being five times more extensive than required by present day demands. It was one of the chief resting places—the half-way house, so to say, on the turnpike road between London and Brighton. Like many other towns to which coaching once gave life, Crawley steadily collapsed into sleepiness as the coaches gave up the contest with railways. Little or nothing was heard about the place for years beyond the immediate neighbourhood, but there appears to be some revival of ancient habits amongst persons of leisure, and coaches are now on the road again between the metropolis and the queen of southern seaside resorts. Crawley, with its slow-sounding name, may once more resume activity, and if it had many such enterprising inhabitants as the Brothers Cheal it certainly would do so, whether coaches ran or not. These active, diligent men belong to the railway age, and in a very few years have made the name of their native place familiar in the horticultural world.

The Lowfield Nurseries are about two miles from the town, and the railway station is in it. It looks like the main street siding, and would be open to it but for the level crossing gates. Most persons, however, travelling from London find the Three Bridges Station, on the main Brighton line, more convenient. It is three miles from the nurseries, but if Mr. Joseph Cheal happen to meet a friend at the station he will run him over the ground at the rate of seventeen miles an hour with his favourite home-raised and home-trained trotter. The animal is like its master, very quiet, yet very much alive when business has to be done.

It sounds almost incredible when we are told that the ground occupied by the nurseries and comfortable homestead was a ploughed field nineteen years ago; but the Cheals are not boasting men, and would not say what is not true. The land on which the buildings stand and several acres surrounding was bought by Mr. Cheal, senior, the parent of the thrifty sons, who was a well-to-do farmer, and had a good local seed business. The "old man is yet alive," hale and active, in his ninetieth year. He has built himself a span-roofed house for growing Cucumbers and Tomatoes in future, for he must have something to do—some source of enjoyment and pleasure, some "work," and the good crop of the present year is the work of his own hands. Diligence in business with temperance in habits have made him what he is and the business what it is to-day. The nursery grew out of the seed trade, and its extent is now, after a recent addition, eighty-five acres. Probably sixty and possibly more are occupied with fruit trees, Roses, Dahlias, Conifers, evergreens, ornamental trees, and herbaceous plants; indeed, whatever is found to be required in the way of trade.

The time appears to have been well chosen for establishing this business in Sussex, for several small nurseries in different towns were waning, the trade simply dwindling away through the old habit of waiting for customers. Messrs. Cheal, no doubt observing the results of lethargy of that nature, determined to adopt a different course—lay a good foundation, provide articles on which they could pledge their name, then let the world know they had them by the same fair business methods that other successful men have adopted. They first then secured a good home trade, and for this the district was favourable. It is salubrious, in some parts highly picturesque, and being within easy reach of the metropolis attracted rich London merchants and others to acquire residences and add thereto parks and gardens. Then the business was extended and made general, the proprietors entering fully and fairly in the competition of the world.

The time for commencing when they did appears also to have been favourable in another important respect, for it just enabled them to get well established, and their grounds well stocked with saleable goods when a revival set in on the subject of fruit growing, and a greatly increased demand arose for trees. The importance of fruit as food became to a larger extent recognised, and the desirability of growing much more at home, instead of purchasing from abroad, at length was admitted. This extra demand gave the opportunity for the firm to step to the front as caterers, and it is no doubt a fact that the trade of the older firms has increased with the advance of the new. The increase of some is known to be considerable, and if there should be a decrease in any the reason is not far to seek.

The soil of the Lowfield Nurseries may be described as a good holding loam, not easy to work when wet, while it bakes when dry, but catch it right and it falls like powder. It seems to suit everything, or is made to do so, with such additions as experience has found the most suitable. Rhododendrons grow as well and compactly, setting their buds as freely as in the best of sandy peat, and a great deal better than in much soil that is so described. It is the same with all kinds of American plants and Conifers, which, whether green or variegated, are in the best of colour, while fruit trees, Roses, and Dahlias evidently find

what is requisite for their healthful growth. Early in the month the last named flowers made an imposing display, as may be imagined when it is stated they are grown by the acre. There were really several acres, the singles being kept distant from the others, and thousands of varieties of these were flowering for the first time; but so good are the named varieties now that only few can be selected as likely to win certificates or awards of merit, for being distinct from and superior to others in cultivation. Still, such awards are obtained, as has been the case this year both at the National Dahlia Show and the Royal Horticultural Society. Messrs. Cheal took the single Dahlias in hand in their early days, and by care in cross-fertilisation became the originators of many beautiful varieties. All the other types are extensively grown also, and a few good new forms have been raised. One, a pleasure ground and border variety, was, as such, chosen for further trial, and appropriately named Profusion. It is nearly as free as Glare of the Garden, but of more rounded bush-like habit, with medium-sized purplish magenta flowers. It is highly effective, admirably adapted for the purpose indicated, and for affording flowers for cutting by the armful.

By far the greater extent of the nursery is devoted to fruit trees of various forms and sizes, trained and untrained, and in all the leading varieties. There are 250,000 of them, and 45,000 just budded for succession. From the commencement a speciality was made of cordon trees, and of these there are thousands studded with fruit buds of the varieties that are the most likely to give satisfaction to planters. They are adapted to small gardens and large, and the large sales prove their popularity. Walls and fences can be covered by them more quickly than any others, and they are the easiest of trees to manage. There are acres of vacant fences and buildings yet to be covered in various parts of the country, and where these do not exist it is easy to stretch a few wires for supporting the trees. There are examples of fences in the nurseries, and of arches over walks covered with fruit-bearing trees, and photographic representations appear in the catalogue of the firm.

Standard, half-standard, dwarf and trained trees of the different kinds and in great, perhaps too great, variety, are grown in "drifts," the number of each variety being in proportion to the demand, but the desire is to reduce the varieties, and "work" a greater number of those selected as the most certain bearers and serviceable. That is a change that most or all nurserymen would be glad to see effected, and purchasers of trees are gradually finding out they will equally benefit by it. But it is the same in buying trees as with anything else, most purchasers like to be choosers, and to obtain what they order; therefore, as long as certain varieties are asked for they will be grown, though others intrinsically better could be supplied at the same price.

Several of the small Apple trees were bearing handsome fruit, and the fruit room contained an interesting assortment. Of the newer varieties Bismarck is one of the largest and richest in colour, the trees bearing freely, and will be wanted in many gardens. Hornead's Pearmain was laden with well-shaped medium to large fruit, and is regarded by the firm as one of the most reliable and good for both culinary and dessert purposes. Professor is distinct among the early Codlin type. In shape it is not unlike Manks Codlin, but larger, and instead of being pale is golden yellow, which gives it a very rich appearance. The Queen is bearing heavily on small trees, the fruit being large and handsome, and regarded by Messrs. Cheal as one of the most profitable to grow. Pott's Seedling, Lane's Prince Albert, Ecklinville, Frogmore Prolific, Domino, Bramley's Seedling, and Wellington are in great demand for their usefulness as culinary sorts, with Red Astrachan and Duchess of Oldenburg for both cooking and dessert. As dessert sorts there is a run on Claygate Pearmain, Cox's Orange Pippin, King of the Pippins, Mannington's Pearmain, and Worcester Pearmain for general utility, and it is expected that Lady Sudeley, or Jacob's Strawberry, will be in equally great demand when its merits are better known. Large stocks have to be maintained of Blenheim Orange if it is slow in bearing, New Hawthornden, Lord Grosvenor and Suffield, Yorkshire Beauty (Greenup's Pippin or Counsellor), Peasgood's Nonesuch and Ribston Pippin; and it will be conceded that those who plant the varieties named are not bad judges of Apples. It would not do, however, to go into Sussex and omit mention of what may be termed the Apple of the county, the Forge. It is the heaviest and most constant bearer of all, every tree being laden with orange red fruit, only medium sized, however, and probably too small for market purposes generally. Messrs. Cheal do not "push" it, but simply state its merits in Sussex, leaving others to try it elsewhere if they wish to do so. It needs no recommending in the county where it is known so well.

Of Pears, Plums, Cherries, Peaches, Nectarines, and Apricots it can only be said they are fully represented, and like the others in as clean and healthy a state as could be desired. A new orchard house has been erected, and it is intended to cover the roof mainly with cordon Pears. At present there are besides those planted out Pears and Apples in pots bearing very large fruit, and a house is devoted to Vines in pots.

There are well appointed offices, and in them admirably executed landscape plans by Mr. J. Cheal, who has a talent in that line, and as a consequence is entrusted with the laying out and remodelling of parks and gardens in various parts of the country, and being as well skilled in photography he can show specimens of his work. He is also able to show four splendid and costly volumes of the "History of Surrey," with an inscription from the gentleman who presented them as testimony of his appreciation of the manner in which the recipient had completed the work of laying out and planting a large garden with which he was entrusted.

Messrs. J. & A. Cheal are straightforward men of business, and it

is pleasurable to spend an hour or two with them in their extensive and well appointed establishment.—J.



NATURALLY GROWN CHRYSANTHEMUMS.

TREATMENT OF PLANTS GROWN FOR THE PRODUCTION OF EXHIBITION BLOOMS A SHORT TIME PREVIOUS TO THE SHOWS.

[By J. Doughty, Angley Park, Cranbrook. Read at the National Chrysanthemum Society's Conference, September 11th, 1889.]

IN consequence of the varying conditions under which Chrysanthemums are grown owing to the difference in the practice of cultivators and in the climatic conditions of districts, it is somewhat difficult in referring to the treatment naturally grown plants for the production of exhibition blooms should receive to fix upon a starting point. Much, as the majority of you are aware, depends upon the strength of the plants, the firmness of the wood, and the treatment they have hitherto received.

Speaking as a southern grower, we will suppose that the plants have been well cultivated and are now strong and healthy. We will also assume that the wood is well solidified, and that they have their buds in various stages of development. At the outset I will call your attention to a matter of the greatest importance, and that is the application of a rich top dressing. We top-dress our plants at the end of July or early in August, a space of about 2 inches being left at the final potting for this purpose. About an inch of the material to be used is placed upon the surface of the pots and pressed down rather firmly, the application being made when the soil in the pots is moderately dry, so that it does not work into a paste. The mixture used for top-dressing consists of one part of loam, one part of decayed manure, a small quantity of old mortar, and a sprinkling of bone-meal. For some time afterwards the plants are watered with a can, to which a rose is affixed to avoid the risk of the top dressing being washed out of its place, or, indeed, being greatly disturbed. Whatever feeding the plants may have had previous to this surface dressing should be continued afterwards, as the top dressing has no immediate effect unless a fertiliser of quick action be added to it. But the addition of manure that will act rapidly I do not think absolutely necessary, although I used it previous to last year. Now if the surface material be examined about three or four weeks after its application, strong healthy roots will be found working their way through it, and when the time arrives for housing the plants the surface will be seen to be more or less covered with these healthy, vigorous feeders. In my opinion nothing can be of greater assistance in the taking up of supplies of food so essential to the plants during the development of the buds than these newly formed fibrous roots. This may at first appear to have but little bearing upon the future treatment of the plants. I have, however, explained this to show the condition the plants must be in as regards root action. Having, then, secured plenty of newly formed rootlets for the taking up of the food, we now feed chiefly with Clay's fertiliser and Thomson's Vine manure. These we use alternately, at intervals of about eight days, but in this matter we are guided by the state of the weather. If prolonged dull wet weather sets in the manures must be used more sparingly, so as not to cause too quick a growth, or the flower stems will be weak and the blooms lacking in substance. We use both manures at the rate of about 1 oz. to each plant of the strongest growing varieties, such as Fair Maid of Guernsey, Grandiflorum, Maiden's Blush, Princess of Wales and its sports, and the Queen family. The latter I consider the greatest feeders of all. In the case of weaker growing varieties, such as Meg Merrilies, Criterion, Jeanne Délaux, Lady Hardinge, and Mrs. W. Shipman, we use the manure more sparingly, about three-quarters of an ounce to each plant being a very suitable quantity.

This rate of feeding is continued after the formation of the flower buds, with an occasional watering with liquid manure from the cesspool, as an occasional change of food is, I believe, very beneficial to them. The water used is previously placed in a large tub standing in the open, fully exposed to atmospheric influences; hence it is maintained at a somewhat similar temperature to that of the soil about the roots. As a still further assistance to the plants a bag containing soot is placed in this tub. This bag is refilled with soot about once a fortnight, as the goodness is found to be washed out of the soot in about that period. The plants are fed in this way until the blooms commence to expand, when all feeding ceases, excepting when the bloom is late. Then a little sulphate of ammonia is applied. But I do not advise the use of the sulphate excepting for the purpose of assisting in bringing forward late varieties, as it tends to shorten the durability of the blooms after their expansion.

Mildew is a most troublesome disease, and generally makes its appearance with us early in September. Sometimes it attacks the plants earlier, and this season they were attacked at the end of August. We are situated in a low-lying spot, and consequently the Chrysanthemums

are more subject to its attacks than are those grown in gardens occupying a higher and drier situation. On its first appearance every plant is dusted with flowers of sulphur, usually early in the morning when the leaves are wet with dew, as the sulphur will then adhere to the under surface. This is a very important point, as the rain cannot remove it from the under surface as it does from the upper surface. We seldom have to repeat its application, and I have not on any occasion since adopting this practice been troubled with mildew after housing the plants. Black fly is very troublesome with us every season about this time. To eradicate this pest we dust with tobacco powder immediately it makes its appearance. Also after the plants are housed and before the blooms commence expanding we fumigate slightly two or three times to free the plants from aphids that may remain.

Much depends upon the time the plants are housed, especially the late varieties. As to the time of flowering I do not care so much whether such varieties as Boule d'Or or Grandiflorum and the like, form their buds early in August or at the end of the month. Their blooms can be expanded by the middle of November. Last season I took Boule d'Or buds on September 1st, and Grandiflorum buds on September 8th, and exhibited them both in good form on November 12th. These, with such varieties as Princess of Teck and its sports, Barbara, and Thunberg, should be housed earlier, and placed in a favourable position. The above varieties, with others correspondingly late, are placed on the side stages of the greenhouse immediately over the hot-water pipes, and by means of large flower pots are raised as near to the glass as possible. These receive a little sulphate of ammonia twice a week, and when the solar influences are not favourable a little artificial heat must be applied. The cultivator must use his own judgment as to the time of housing his plants, taking into consideration the locality in which he resides and the state of the buds (whether late or early), and also what means at his command for coaching them. These are important points which will repay a little study, and certainly cannot be ignored by those who would achieve success in a close competition.

Having stated how our late varieties are treated, I will allude to the general collection. The earliest varieties, which require very little fire heat—i.e., only sufficient to maintain a dry atmosphere, are placed in an earlyinery; and those that are naturally a little later are arranged upon the centre stage of the greenhouse. All are raised as near to the glass as possible by means of planks laid upon drain pipes placed in an upright position upon the stage. The plants are placed upon the platform thus provided, the tallest plants being arranged at the back and the dwarf ones towards the front. The plants nearest the front are raised by means of various sized flower pots, so that when all is complete they form a very sharp slope to the south. By this arrangement the upper growth of every plant receives a full share of light and air—a matter of great importance if good blooms are expected. Again, every bud can be seen when the cultivator is standing in front of them, so that should they require attention a plant or two can easily be removed for that purpose.

I will not occupy your time in alluding to dressing the blooms, as most growers will have acquired that art from practice and from the directions so well given in Mr. Molyneux's eminently practical book. But, in conclusion, I should like to draw your attention to one further important point, and that is arranging the colours on the exhibition board. I have noticed scores of stands arranged with sometimes as many as four, and even six, blooms of a bronze or other dark shade placed together. This is not as it should be, for by a judicious intermingling of the light and dark shades of colour each bloom will add to the effect of its neighbour, and consequently to the attractions of the exhibition table. It may also make all the difference between a first or second place in a close competition.

NORTH VERSUS SOUTH.

MAY I venture to invite an expression of opinion from Chrysanthemum growers upon the following suggestion? Could not a special class be provided in the Exhibition held in November at the Aquarium, with a duplicate class in the provincial Show in the north, as an equal test for northern and southern growers? Thus:—Say twenty-four incurved and twenty-four Japanese blooms (distinct) to be exhibited at both Shows, the one entry being sufficient for both Exhibitions. The class should be judged in the south, and points awarded; later on the same class, by the same exhibitors, should be judged by the same Judges in the north, and points awarded. The exhibitor obtaining the highest total number of points should then be the admitted national champion for that particular year, and the prize awarded. No greater test, in my opinion, could possibly be made of a grower's ability, not only to produce quality, but in timing his blooms.—JOHN DOUGHTY, Angley Park Gardens.

A PECULIAR CHRYSANTHEMUM BLOOM.

I ENCLOSE a bloom or rather bud of Chrysanthemum Lady Lawrence. I have four plants side by side, each plant with three buds on. The buds on two of the plants are in the same state as this; a third plant rather more backward is looking as though it may go off in the same eccentric manner, while the fourth, more backward still, looks all right.

I have no other variety with such a curious malformation; it therefore appears to me that Lady Lawrence is liable to it, and more especially the earlier buds. You will observe the stem has made a very long growth after the bud was fixed, and the leaflets on the side of the stem are peculiar.

I shall be glad if anyone can tell me the cause, or probable cause, of

the monstrosity, as I do not remember having met with a similar form before. Madame B. Rendatler sometimes forms a number of eyes, but I have not seen it like this.—R. F. JAMESON.

[The bloom sent has the outer florets extended into growths around the centre axis somewhat in the way of the Hen and Chicken Daisy and other flowers. It is probably due to the formation of a hard end and some check, the growths resulting from an effort of the plant to extend.]

A VISIT TO THE BULB FARMS OF HOLLAND.

[A paper read before the Nottinghamshire Horticultural Society by Mr. Alfred H. Pearson.]

IN these days of steam there is but little difficulty in getting to the Netherlands. There are several routes open to the traveller, but supposing we choose to go *viâ* Queenborough and Flushing we can leave Nottingham at 3.17 in the afternoon, and arrive in Haarlem at 11.20 next morning. One boat leaves Queenborough at 10 P.M., and if the sea be calm or you are fortunate enough to be a good sailor (which I am not) you can have a refreshing sleep, and be ready to get up and look about you when the boat reaches Flushing at 6 A.M. Having landed and passed the customs, we go into the waiting room to await the loading of the luggage and mails into the trains, and we have plenty of time to fortify ourselves with rolls and butter, eggs, and coffee. Once in the train we have a capital opportunity of seeing the country, for the track being slightly elevated and the land perfectly flat there is nothing to impede the view. But before we look out at the view let us look back a moment at the geographical picture. You will notice that I spoke of travelling to the Netherlands, which country most Englishmen insist on calling Holland. If you can imagine a Dutchman calling England Yorkshire you can just as well imagine what a Dutchman thinks of us when we call the Netherlands Holland. The Netherlands, as you know, consists of eleven provinces, of which North and South Holland are the the home of bulb-growing, and hence I suppose the English idea of calling the whole country Holland.

We have left our train standing at Flushing, which is on the Island of Walcheren, celebrated for growing the Cauliflower, which bears its name. From this island we pass into South Beveland, and thence into North Brabant, where at Rozendale the line branches, part going on to Cologne, Berlin, Hanover, and St. Petersburg, and the other branch crossing, by a very long bridge, one of the mouths of the Rhine, and entering, *viâ* Dordrecht and Rotterdam, into South Holland. Up to this point the land has been principally cultivated in small fields of two or three acres, and mainly by the spade, the crops being those usual on a farm, and also Broad Beans, Turnips, Onions, &c., &c., for seed. At Dordrecht we seem to have reached the paradise of allotment gardeners, for as far as the eye can reach in every direction nothing else is to be seen. Apples, Pears, Gooseberries, and immense quantities of Strawberries are sent from here into our markets. Leaving Dordrecht, we are soon at Rotterdam, and then the eye rests on one huge plain of grass, which, broken by ditches and here and there by trees, stretches right away through South and North Holland to Amsterdam.

What strikes us most in passing through this stretch of country is the great neatness and order of everything. Nothing seems to be wasted, and we do not see a yard of land unoccupied. The roads are well kept. They are generally paved in the centre with very small thin bricks set edgewise and macadamised on each side, and as the canals take all the heavy traffic they wear well. They are planted on each side with avenues of trees, the shade of which must be extremely grateful in the hot weather. The trees are all trained with perfectly straight stems, and being trimmed up to one height remind one of the trees we used to have in our German toy boxes years ago. They are certainly more neat than artistic, and yet they seem to be quite in harmony with everything else in the landscape. Another thing which much struck me the first time I visited the Netherlands was to see the cattle during the early part of the season turned into the fields with rugs on just as we treat horses. I thought that English farmers might learn a lesson here, for what can be worse than to take a sensitive animal like a cow, which has been shut up in a warm stable for four or five months, and turn it out into a grass field exposed to an east wind without protection? But I must not give any other details of the route, but hasten on to the bulb grounds.

The bulb farms are situated on a strip of land running close behind the sand downs from Leyden in South Holland to Alkmaar in North Holland, a distance of perhaps thirty-five miles, although the greater part of the farms are situated on the southernmost twenty miles—viz., from Leyden to Haarlem. This line is by no means direct, although it runs about parallel to the coast line, nor is all the land of equal quality. If it were we should not find the bulb growers giving £500 per acre for their best land. In some parishes a large proportion of the land grows bulbs, some have only a few fields which are capable of their culture, whilst perhaps the next parish on the line does not grow bulbs at all. One parish grows Hyacinths to perfection; another, where the land is stronger Tulips, whilst we find also from experience that certain varieties of each succeed best in certain localities.

In making this assertion as to varieties of Hyacinths doing better in one village than another, I shall come under the criticism of those who maintain that a good piece of Hyacinth land will grow all sorts equally well, yet I never see such Baron von Tuyl as I do in one village, nor such Queen of the Blues as grow alongside them, although other varieties on the same fields are no better and perhaps not even equal to those grown on other farms. Again, I know a spot where King of the Blues is grown in large masses, and superior in my judgment to

any grown elsewhere. And why should not this be so? Apples and Pears are wonderfully altered by the quality of the soil they are grown upon, although the climatic influences may be very similar. Take, for instance, Easter Beurré Pear, which is almost worthless at Chilwell, whilst at Elvaston Castle (eight miles away) it is grand; or Rivers' Prolific Plum, which produces an annual fortune at Sawbridgeworth, whilst in many places you can scarcely keep it alive.

What, then, constitutes good soil for Hyacinth culture? I can hardly tell you definitely, nor indeed can the growers, for they often have to experiment in order to find out if soil will do them well or not; but I can give you a few points. The best Hyacinth land is almost pure sand with a slight admixture of peat, and it is prepared in the following fashion. Of course most of the land has been used for bulb-growing for generations, and some for a hundred years or more, but in making a new garden the first thing is to level the land. This is done not by simply throwing the high parts on to the low, but by lowering the whole surface until it is about 2½ feet above the water line in the ditches. The land is then trenched to a depth of 6 or 7 feet (the men at the bottom of the trench being below the surface of the land). If there be any beds of peat they are taken out, as they prevent the drainage of the water downwards in the winter, and also arrest the rise of the water upwards in the summer, and without this the bulbs would be shrivelled up by a week or so of hot weather. Having taken out the peat as far as is necessary, the deficiency is made up with pure sand and the trenching mixes all together. The cost of this operation varies of course with the amount of surface soil to be removed and the peat to be taken out. In some cases they get the surplus sand off and sell it for ballast to the boatmen for as much as the labour costs. The peat is given away to the farmers for top-dressing grass land. In other cases they are not so fortunate. A friend of mine showed me fifteen acres planted last year for the first time, which the year before was covered with coppice wood, and it had taken 100 men six months of daily work to get it ready.

The land being levelled and trenched is ready for cropping, and we may look upon it in the same light as old bulb ground which has the following rotation:—First year, trenched 3 or 4 feet deep (sometimes 6 for a change), and manured. The manure is cow dung, and is applied in enormous quantities (about 6 inches thick by the best growers), and placed below the first spit of soil. In this land Potatoes are planted—"to take the fire out of the dung," as they say—and in digging up the Potatoes the manure becomes well incorporated with the soil. Second year Hyacinths are grown. Third year, Tulips or Ranunculus, Anemones, Gladioli, Narcissi, &c. Of course different growers have different ways. Some manure every third year, some only once in four years; some grow Hyacinths followed by Tulips, others grow Tulips followed by Crocuses. But where does this immense quantity of manure come from seeing that the pastures look so green? Ah! that's where the water carriage of this wonderful country comes in, for not a ton of the manure which is used on the bulb farms is made in the locality. Most of it comes from the other end of North Holland, between Alkmaar and the Hilder, and some comes from Friesland on the other side of the Zuyder Zee. "Well," I asked, "how do they go on there without manure? The farmers there can no more do without it than those can who live near the bulb fields." "True, but they occupy cooler land, to which cow dung is less suitable than to the sand land around the bulb farms, and so they bring the cow dung down in boats, and load back with horse dung and refuse grains, &c., from the gin distilleries at Schiedam." "And what becomes of all the Potatoes?" "They are sold by auction, and mostly come to England." I had my doubts as to what the quality of these Potatoes would be grown with so much raw manure. The land then is manured at a cost of from £30 to £50 per acre (exclusive of the trenching). We must now glance at the crop which is to be put upon it, and first in importance comes the Hyacinth.

HYACINTHS.

The Hyacinth has been cultivated in Holland for upwards of three centuries. Pages and even books have been written on its ancient history; suffice it to say that when all has been written but little has been proved, but it is generally accepted that the plant came originally from the Levant, and that its habitat was in meadows, flooded in spring and dry in summer. Endless discussion has taken place with respect to its original colour, which was probably blue, and not unlike our own wild Wood Hyacinth. Of much more interest to me than all the discussions on this question was one of Segher's admirable flower pictures, in which was a representation of the Hyacinth as he saw it about the year 1600. Walking round the gallery in the Hague on the 28th of last April I was admiring a grand picture by Seghers, when my companion said, "Look at that *Narcissus triandrus albus*, fancy their growing that in 1600." He was struck by seeing a plant which is supposed to be of recent discovery and introduction faithfully portrayed in this old painting, whilst I was equally interested to note that the Hyacinths in this and other pictures by the same artist are all blue, with long thin spikes and small bells, dotted about at intervals of about 1½ to 2 inches, whereas the Tulips were as fine in 1600 as any grown now under the florist section. However, although I only saw blue Hyacinths in Segher's pictures, it is known that white ones were grown in 1582, and in 1767 there were six yellow varieties catalogued. In 1734 one bulb of the old double Non Plus Ultra was sold for £133 8s. 6d., so we see that Tulips did not secure all the fancy prices in those days.

The Hyacinth is increased by four different methods. First, the

natural one of throwing off side bulbs or offsets; second, by hollowing; third, by crossing; and fourth, by seed. The first or natural method is not much used, because it is too slow, the second and third being improved methods whereby Nature is assisted. Some varieties succeed best from hollowing, whilst crossing suits others. The hollowed bulbs give a great number of small offsets, the crossed fewer and larger, which, as a rule, take one year less to come to perfection. I say, as a rule, for different varieties vary. Some of the hardy blues are ready for sale at four years old, whilst others are five or six years before they are fit to send out as first size bulbs. The bulbs sold as first size should be at perfection the following spring—i.e., when we have them. We very rarely see any bulbs on the fields flowering in their best form, for naturally when our friends have been at a great expense in growing them they like to reap the reward of their labours by turning them into cash, and as a proof that the demand is equal to the supply, we have the fact that very few bulbs are ever left over for planting. A few are used every year for propagating, but the bulk are sold. Occasionally we do see a bed of bulbs planted which should have been exported the previous year, and then the owner will point to them with pardonable pride and say, "There, your bulbs should be like that." The bulbs I saw were not the selected best bulbs, but the leavings of what came here, yet I feel sure that none of their exported brethren ever came up to the glorious blooms I saw on the field. It is a disgrace to our culture when it happens, as it occasionally does, that the second size bulbs planted in the open for beds produce infinitely superior blooms to the first size bulbs grown in pots for exhibition.

But I must go on to the fourth method of propagation—viz., by seed; this is only done in order to obtain new varieties. So far as I have seen no effort is made at artificial crossing; they simply plant a bed of good varieties mixed together, and allow Nature to take her course. Indeed many Dutch florists, Heer de Graff, the noted Narcissus raiser in particular, are rather jocular on the subject of cross-fertilisation, and say that they have obtained better results without it than we have with it. That may be; they started first in the race, and have climate in their favour. There is nothing peculiar about the propagation of Tulips, which is done by dividing the offsets from strong bulbs. Some varieties produce these offsets much more freely than others, and this is the reason that some very beautiful Tulips are kept for years at such a price as prevents their becoming general favourites.

Time will not admit of my going further into the question of propagation. I think, then, we may leave the details and for a moment take a view of the fields. What do they look like? It would be difficult to say. Each year they strike us with a different aspect, and in this case familiarity does not breed contempt. The aspect of the fields varies greatly; if you approach the border of a village where almost every labourer grows a few bulbs you will see in one small garden little patches of every colour, one little bed of yellow Tulips, one little bed of scarlet, half a bed of Robert Steiger, half a bed of Chas. Dickens, and a bed of a dozen sorts mixed. Walk a little further, and you come to the land of a large grower; you see beds of Hyacinths 10 yards long and 3 feet wide, divided by tiny sunk walks a foot wide, like Asparagus beds, so that in looking down the lines they seem like one bed; then you will see such a blaze of colour as you probably never saw before. It is wonderful! how the colours contrast! snowy white and crimson, indigo blue and yellow, purple and flesh-colour, red and azure blue. It is like a gorgeous carpet which stretches over 15 or 20 acres. Occasionally where two or more bulb farms adjoin you may see 40 or 50 acres one blaze of colour. The full glory does not last long, for as soon as the blooms are well expanded the beds are carefully looked over for rogues, and then the men come, armed each with a small knife and a basket, and start six, eight, or ten in a row, to cut off the flowers. This is to prevent the bloom exhausting the bulbs, and also (a matter of great importance) to allow the foliage every facility to develop. The blooms are thrown away in heaps, or often spread on the surface of the soil over newly set Potatoes to prevent the sand being blown away into the ditches or on to the neighbouring property.

The same with the Tulips, they only bloom a day or two and then are cut off. So if you would see the fields at their best you should know which are the early spots, and run round these first and so on to the later. After a week of this sort of thing, from early morn until night, most people get rather tired, and indeed many men who go over on business will not face more than two days of it. If the weather is hot you have such a glare of colour constantly before the eye, such a sense of being "crowded up" with Hyacinth perfume, that even at night you seem to be still walking the fields and have a difficulty in sleeping; a change of occupation for a day is then a great relief, and such a change may be found in one of the fine picture galleries for which the country is famous.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 24TH, 25TH, AND 26TH.

THE VEGETABLE EXHIBITION AND CONFERENCE.

THE introductory remarks respecting this Show on page 259 will give an idea of its extent and importance, while in the following notes the principal exhibits and exhibitors are named, the decisions of the respective Committees of selection not being completed in time for publication in this issue. The first day at Chiswick was a most unfavourable one, rain falling heavily throughout the greater part of the

afternoon; but Wednesday proved fine, and the proceedings of the Conference were commenced at 2 P.M. The Exhibition is continued to-day (Thursday), and the Conference will be resumed at 2 P.M. the papers to be read being noted on page 266. The order of the classes in the schedule is followed as nearly as possible in the appended report.

GREEN VEGETABLES.

Cabbages.—There was a good display of Cabbages, over 70 feet of staging being occupied with the exhibits in the three classes, in which there were about twenty entries. Messrs. J. Veitch & Sons, Chelsea, had an extensive collection representing all sections, very notable being Early Etampes, Denning's Early, Chou de Burghley, Early York, Little Pixie, and Rosette Colewort amongst the smaller Cabbages, with Offenham and Early Flat White amongst the larger ones. Messrs. R. Veitch and Son of Exeter, Messrs. Vilmorin & Co., Paris; H. Hannan, Edinburgh; W. Poupart, Twickenham; J. Carter & Co.; Oakshott and Millard also exhibited some of their special varieties and strains. Mr. J. Hughes, Bracknell; Mr. J. Willard, Highgate; and Mr. W. Pope, Highclere Gardens, Newbury, also showed samples of garden Cabbages.

Kales.—Considerable space was occupied with Borecoles and Kales, Messrs. Veitch & Sons having a fine type of Curled Kale in Extra Dwarf Curled. Mr. H. Deverill also had a good sample in the new Curled Culzean Castle. Messrs. G. Bunyard & Co. had specimens of Cottager's Kale, and from Chelsea came some tall Kales, the plain leaved Chou de Milan and Tall Green Curled being noteworthy.

Savoy.—These did not form a very large display, but Mr. G. Wythes Syon House Gardens, Brentford, had a good collection of varieties, comprising Gilbert's Universal, Early Dwarf Ulm, and Drumhead. Messrs. Bunyard & Co., R. Veitch & Son, and J. Veitch & Sons, also had collections—Dwarf Green Curled, and Early Dwarf Ulm, Yellow, and Drumhead, and Very Early Paris being capitally represented.

Brussels Sprouts.—Few dishes of picked Sprouts were shown, these being Wroxton from Mr. Deverill, Sutton's Exhibition from Mr. J. Hughes, Selected from Messrs. R. Veitch & Son, Veitch's Exhibition from Mr. G. Wythes, and Reading Exhibition from Mr. W. Pope, all fairly good neat samples. Plants were staged in pots down the centre of one of the tables from Messrs. J. Veitch & Sons, this being an instructive exhibit, showing the habits of the respective varieties and their relative productiveness. Mr. G. Wythes and Mr. H. Hannan also had several plants shown in the same way.

Artichokes.—These formed a moderate display, the best samples being from Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, Messrs. Oakshott & Millard, W. Poupart, G. Wythes, C. J. Waite, and J. Veitch & Sons, Green Globe and Purple Globe being the only distinct types, the others differing chiefly in size.

Spinach.—Eight exhibits comprised all the Spinach shown, Prickly or Winter Spinach and Round or Summer Spinach being the chief varieties shown, but Mr. R. Smith, gardener to Lady F. Fletcher, Kenward, Yalding, Maidenhall, had a dish of the very large Viroflay, from seed sown at the beginning of August. Mr. W. Poupart also had a basket of New Zealand Spinach.

Cauliflowers were well but not largely represented. There was only one class. Veitch's Autumn Giant was best represented, the majority of the exhibitors showing this grand variety, and few of the heads were coarse. Pearl and Walcheren were also shown. Amongst the Broccolis were Michaelmas White and Veitch's Self-Protecting. Mr. R. Smith, Maidstone; Mr. Hughes, Bracknell; Mr. J. Lambert, Shrewsbury; and Mr. W. Wildsmith, Heckfield, were amongst those who showed, the list including several already named.

Red Cabbage.—Two examples of one variety were asked for, and they were shown by eleven exhibitors. The varieties represented were Large Blood Red, Red Dutch, Sutton's Blood Red, and Red Drumhead, Messrs. Bunyard, Chadwick, Wildsmith, Oakshott & Millard, Smith, J. Millard, J. L. Ensor, J. Hughes, J. Carter & Co., and J. Dobbie & Co. showing them.

FRUITS AND PULSE.

Tomatoes.—Quite an ornamental display was formed by the Tomatoes, of which a good number was shown by Messrs. Veitch & Sons, Vilmorin and Co., Oakshott & Millard, C. J. Waite, T. Laxton, Harrison & Son, W. Poupart, T. Lockie, Windsor, and G. Bunyard & Co. Fine samples of fruits were shown under the following names:—Mikado, Golden Queen, President Cleveland, Perfection, Ham Green Favourite, Hackwood Park, Dedham Favourite, and Waite's Seedling.

Gourds.—An extensive and varied exhibit of Gourds occupied a table the whole length of theinery. Mr. C. Osman, Sutton, Surrey, had a very large collection, comprising about forty varieties, varied in form and colours. An excellent collection was also contributed from the Society's garden, comprising some very peculiar and interesting forms. Messrs. R. Veitch & Son, J. Veitch & Sons, G. Bunyard & Co., and Harrison and Sons were also exhibitors. Huge specimen Gourds, Pumpkins, and Vegetable Marrows were shown by several exhibitors.

Beans.—Runner Beans were represented by some well-grown collections. The most notable varieties were Girtford Giant, Chelsea Giant, Carter's Jubilee Runner, Ne Plus Ultra, Neal's Runner, Veitch's Mammoth, and The Czar. Messrs. J. Carter & Co., H. Deverill, J. Veitch and Sons, J. Wallis, Keele Hall Gardens; C. J. Waite, Harrison & Sons, W. Palmer, and J. Lambert were the chief exhibitors.

Dwarf Beans.—These were scarcely less well represented than the Runners, but they were not numerous. Canadian Wonder, Ne Plus Ultra, Negro Longpod, Mohawk and Syon House were the chief varieties

from Messrs. Harrison & Son, G. Wythes, J. Willard, J. Wallis, J. Hughes, and C. J. Waite.

Peas.—The exhibits in these classes were more numerous than might have been expected, both dishes and varieties being abundant. Messrs. J. Waite, Goodacre, Bunyard & Co., Divers, Maher, Oakshott and Millard, and J. Carter & Co. were the leading exhibitors.

Cucumbers.—Lockie's Perfection, Carter's Model, and Purley Park were the chief varieties shown, Mr. Lockie's five fruits of his variety being excellent. Messrs. J. Carter & Co. had six large fruits as grown for seed. Messrs. Bunyard & Co. showed some ridge varieties, and Mr. Laxton had a variety named "Open Air," a ridge Cucumber raised from Telegraph crossed with the Bedfordshire Ridge, sown May 16th, and grown entirely of doors.

Capsicums and Chilies.—Messrs. Vilmorin & Co. were the chief exhibitors of this, showing Large Bell, Sweet Spanish Mammoth, Golden King, and Bull Nose, all large richly coloured varieties. Mr. J. Willard sent a dish of Cayenne Capsicums, and Mr. Divers Long Red Chilies.

TUBERS AND BULBS.

Potatoes.—A considerable portion of a table the whole length of the large vinery was filled with Potatoes, forming one of the most important parts of the Exhibition. The tubers shown were of satisfactory quality generally, and the varieties were of course very numerous. It is, however, unnecessary to refer to them at length now pending the Judges' report. From the Society's gardens came about fifty dishes. Messrs. Oakshott & Millard sent twenty-one dishes, Messrs. G. Bunyard & Co. had thirteen dishes, Messrs. Harrison & Sons fifteen dishes. In the class for twenty-five dishes Mr. J. L. Ensor, Ipswich; Mr. J. Hughes, gardener to Col. Cartwright, Eydon Hall Gardens, Byfield, Northampton; and Mr. E. Wiles, gardener to A. Cartwright, Esq., Edgcote, Banbury; and Mr. Lye, Cliffe Gardens, Market Lavington, were the chief exhibitors. From the Society's garden came a collection of American seedlings. Amongst other exhibitors were Messrs. R. Veitch & Son, Webb & Sons, Stourbridge; W. Palmer, Thames Ditton; Mr. Wildsmith, Heckfield Gardens, Winchfield; J. Burnett, Deepdene Gardens, and C. Sharpe & Co.

Onions.—These occupied about 70 feet of tabling, and were of excellent quality. One of the largest collections in class 44 was that from Mr. H. Deverill, Banbury, which consisted of thirty dishes. Such well-known varieties as the Banbury, Improved Reading, Blood Red, James' Keeping, Nuneham Park, Giant Rocca, White Lisbon, and White Spanish were shown well, and in addition were the fine newer varieties Rousham Park Hero, an excellent exhibition variety; Ailsa Craig, of which there were some fine bulbs; Cocoa Nut, Cranston's Excelsior, Anglo-Spanish, a handsome Onion, resembling Rousham Park Hero; and Improved Wroxton, the latter a globe-shaped variety of good appearance. Messrs. Vilmorin & Co., Paris, exhibited ten dishes, the bulbs being of large size and in beautiful condition. Giant Rocca was totally different from the variety under that name in other collections. The bulbs were of enormous size, 7 to 8 inches in diameter, and bright in colour. Flat Italian Tripoli and White Lisbon were also grandly shown, being large in size and white as milk; Giant Madeira (globe shaped) was very striking in appearance. Messrs. Oakshott & Millard, Reading, also had ten dishes, a very neat and even collection; Improved Reading, a very useful Onion, was well shown amongst them. Four dishes were shown by Mr. Wythes, Syon House Gardens, Brentford. A collection of thirty dishes came from Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, and it was chiefly interesting as showing many old and tried varieties in clean bright condition. Of the newer varieties Southport Red Globe was the most noteworthy; it is a medium-sized Onion of useful appearance. The Queen was shown in this collection about the size of marbles. As sometimes grown it is 3 to 4 inches across; which is the true variety? Messrs. Bunyard of Maidstone also exhibited six dishes in this class. There were six collections of six dishes. Mr. Deverill had a splendid lot, comprising Ailsa Craig, Rousham Park Hero, and Anglo-Spanish in very fine condition; Cocoa Nut, very large; The Black Douglas, a very dark skinned seedling, stated to have been raised at Culzean Castle, Ayrshire, by Mr. Murray; and the Improved Wroxton. These were remarkable as evidence of skill in culture applied to naturally large varieties. They had been grown in a deeply trenched stiff black loam on a south border, being raised from seed at the end of January, pricked out and grown with bottom heat until the middle of April, then planted out, mulched with cow manure, and dressed during the season with Cannell's manure. Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Berks, had a well-grown collection of bulbs, the varieties corresponding with those already named, except Improved Pinesfield, a remarkably handsome and solid Onion. Messrs. R. Veitch & Son, Exeter, showed old varieties very well, and Messrs. Wallis, gardener to R. Sneyd, Esq., Keele Hall, Newcastle, Staffs; W. G. Gilbert, Norfolk; and R. Nicholas, Castle Hill, North Devon, also exhibited. There were twenty-five single dishes, and it is quite impossible to name all the exhibitors. Moreover, the varieties were chiefly the same as those already named.

Kohl Rabi. green and purple varieties, came from Messrs. Osman, Sutton, J. Veitch & Sons, and Jas. Carter & Co., but these are not much used for culinary purposes in this country.

Turnips.—There were about twenty exhibitors of Turnips in the two classes provided for them. Veitch's Red Globe, Snowball, Dobbie's New Model, Green Round, Red American Stone, Golden Ball, Orange Jelly, White Dutch, and Early Milan were amongst the varieties best shown, and formed a very fine display. Messrs. Pope, Palmer, R. Veitch

and Son, Dobbie & Co., Wythes, Lambert, R. Maher, and Wallis showing some of the best produce.

Leeks were a very fine display. There were some fifteen exhibitors of them, and there was some splendid produce staged. The Lyon was finely shown, also Renton's Monarch, and Prizetaker, Musselburgh, and Ayton Castle were also noteworthy. Messrs. Carter exhibited good examples of Holborn Model, and Messrs. Deverill & Waite of Oxonian. Other exhibitors were Messrs. Dobbie, Wythes, Pope, Lambert, Harrison, Dunn, R. Veitch & Son, Oakshott & Millard, Stuart & Mein.

Jerusalem Artichokes, Shallots, and Garlic were not much shown.

TAP ROOTS.

Beetroot.—The exhibits occupied 50 to 60 feet, and were remarkably well shown. Of single varieties there were upwards of twenty exhibitors. Amongst the varieties best represented were Cheltenham Green Top, Hope's Middleton Park, Dobbie's New Purple, very dark flesh; Pragnell's Exhibition, a good variety both for kitchen and showing, well coloured, handsome in shape, and of good flavour; Sutton's Excelsior, Dell's Crimson, a useful garden Beet; some remarkably fine roots of that useful old variety Nutting's Red, McGregor's Favourite, and others, and among the exhibitors were Messrs. Veitch of Exeter; Mr. Taylor, Cheltenham; Mr. Wythes, Mr. W. G. Gilbert, Mr. Chadwick, Ealing; Messrs. Stuart & Mein, Kelso, and others. There was a good entry with collections of four varieties, these including those previously mentioned, also Eclipse Turnip-rooted, Carter's New Early Round, Webb's Extra Dark, Sutton's Improved Blood Red, and amongst the exhibitors were Messrs. Carter & Co., High Holborn, London; Messrs. Bunyard, Mr. C. J. Waite, Esher; Mr. Wallis, Mr. Malcolm Dunn, Dalkeith; Mr. Wythes, Messrs. Oakshott & Millard, Messrs. Vilmorin and Co., Messrs. Harrison & Son, Leicester; Mr. Palmer, Thames Ditton, and Messrs. J. Veitch & Sons, Chelsea.

Salsafy and Scorzoneria.—These were in capital condition, the latter especially, Messrs. Carter & Co. having some fine roots. Messrs. J. Veitch & Sons, Harrison & Sons, Willard, Oakshott & Millard, Bunyard, Gilbert, Burnett, Chettleburgh, and Smith, also had good produce.

Stachys tuberifera.—These came from Messrs. Carter & Co., who had plants in bearing and picked roots; J. Veitch & Sons; Dunn, Dalkeith; and J. Willard. Horseradish appeared to be shown only by Messrs. Veitch & Sons and W. Poupert, Twickenham, the latter having fine examples.

Parsnips.—Seventeen lots of these were shown, five roots each of one variety. Messrs. J. Veitch & Sons exhibited fine roots of Improved Hollow Crown; Messrs. Dobbie & Co. of their selected variety, and Messrs. Oakshott & Millard of Student. Mr. Wildsmith also showed the latter well, and Mr. Lambert had some good examples of Hollow Crown.

Carrots.—About twenty-five exhibited Carrots, and these were a splendid display; in fact, one of the best in the Exhibition. Sutton's Intermediate, Carter's Summer Favourite, Carter's Scarlet Perfection, Sutton's Early Gem, Veitch's Matchless, Veitch's Scarlet Model, Saint Valery, Early Shorthorn, Improved Altrincham, James's Intermediate, Long Surrey, Scarlet Horn, Early French Horn, Harrison's Early Market, and Nantes were all well represented, some of the best produce coming from Messrs. Vilmorin, Bunyard, J. Veitch & Sons, C. Sharpe and Sons, Harrison & Sons, Oakshott & Millard, R. Veitch & Sons, Chettleburgh, W. H. Divers, Lambert & Waite.

SALADINGS.

Celeriac.—Five lots of Celeriac were shown, much the finest being that from Messrs. Vilmorin & Co., very large roots of these varieties, Apple-shaped, Large Early Erfurt, and Large Smooth Prague. Mr. F. Taylor, Swindon Hall Gardens, Cheltenham, and Mr. J. Willard had specimens in this class, but much inferior to the others.

Celery.—About 40 feet length of staging was devoted to the Celery exhibits, which comprised some admirable specimens. Extremely large heavy sticks were shown by Messrs. Dobbie & Co., Rothesay, Invincible White and Select Red being the varieties. Mr. H. Deverill had good samples, named Aylesbury Prize Red. Mr. C. J. Waite showed Sulham Prize, Standard Bearer, and Aylesbury Prize Red in fine condition. Messrs. J. Veitch & Sons sent three stems of White Plume, grown in Scotland, the stems and part of the leaves white or variegated.

Lettuces.—A large and representative collection of these came from Messrs. J. Veitch & Sons, including all the principal types, Royal Albert, Californian Curled, Early Paris Market, Brown Dutch Neapolitan (very large), and Marvel being notable amongst the Cabbage varieties. Of Cos Lettuces, Brown Marseilles, Sutton's Queen, and Paris White were good.

Endives.—Messrs. J. Veitch & Sons, Oakshott & Millard, R. Maher, and G. Bunyard & Co., were the chief exhibitors of Endives, both round-leaved and curled being well shown. Moss Curled, Picpus, Stag's Horn, Imperial Curled, and The Garland were the best of the Curled types, white and round-leaved Batavian being notable in the other section. Messrs. Vilmorin & Co. contributed a collection of Endives in shallow pots, some of the samples being quite ornamental, especially one named "fine lacinated Louviers," very compact and dwarf. Mr. G. Wythes also had good specimens.

MISCELLANEOUS.

Cardoons.—Three exhibitors had specimens of Cardoons, all enormous stems, and leaves 4 or 5 feet long and 9 to 12 inches across at the

thickest part. Mr. J. Lambert, Mr. W. G. Gilbert, and J. Veitch and Sons were the exhibitors.

Leaf Beets.—The two exhibits of these filled but small space. Messrs. J. Carter & Co. had chiefly light-coloured varieties, such as Seakale, Silver (very fine), and Green or Spinach. Messrs. J. Veitch & Sons had the Silver Beet in good form, contrasting well with the dark red Chilian Beet.

Parsley.—Messrs. J. Carter & Co. had samples of Champion Moss Curled and Fern-leaved, very fine, with the Plain-leaved Hamburg. Messrs. G. Bunyard & Co. also had a good strain of Fern-leaved Parsley; Messrs. Dobbie & Co. showed a capital selected curled strain; Mr. W. Poupart had a useful form; Messrs. J. Veitch & Sons had a fine curled strain; and Mr. R. Dean showed Moss Green Curled, very compact and good.

New Vegetables.—Mr. J. Willard and Messrs. J. Veitch & Sons sent specimens of Asparagus Chicory, with long leaves, somewhat like the common Dandelion, but much longer, and with red midribs, the side shoots being cut and used for cooking. Mr. J. McIndoe, Hutton Hall Gardens, showed his new Sprout named Hutton Hall, referred to in the report of the Fruit Committee.

Miscellaneous.—Messrs. Vilmorin & Co., Paris, contributed an interesting collection of Radishes, representing nineteen distinct varieties, some of them remarkably so. Of long Radishes the best were Long White Vienna, Long Scarlet, White Hospital, White Olive, Half-long Scarlet, Purple Olive, and Scarlet Olive (red and white tipped); also known as French Breakfast. Of the turnip varieties there were Grey Round, Yellow Summer, Golden Yellow, White Summer, White Turnip, Scarlet Turnip, Early Scarlet, Early Deep Scarlet, and Early White. Messrs. J. Carter & Co. sent a collection of Peas preserved on the haulms, showing the respective heights, habits, and forms of the varieties. Messrs. J. Veitch & Sons, Chelsea, also contributed an extremely large collection of miscellaneous vegetables besides those named in the various sections referred to in these notes.

COMMITTEE MEETINGS.

The vegetable exhibits occupied so much space that little was left or required for fruit or flowers submitted to the Fruit and Floral Committees. The duties of the latter body were indeed very light and quickly performed, but there had not been a clear understanding that these Committees were expected to meet upon this occasion, consequently the attendance was small. The Fruit Committee was rather more busily occupied, Grapes and Melons being exhibited.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair, and Messrs. A. J. Pearson, P. Crowley, W. Warren, J. Burnett, J. McIndoe, W. Denning, P. Barr, M. Dunn, G. W. Cummins, H. Balderson, J. Smith, W. Wildsmith, G. Wythes, J. Hudson, F. Q. Lane, J. Willard, J. Ross, and J. Wright.

The Thames Ditton Hero Melon was once more placed before the Committee by Mr. W. Palmer, who explained he had been compelled to grow the plants in a shady house with Cucumbers, and other fruits were cut from a cold frame. Those disadvantages may have prejudiced the quality, and the Committee were not able to recommend any special award. Mr. Miller, Roxley Lodge, Esher, sent a large ribbed Melon, which the Committee thought promising, and desired to see it again early in the season, when its flavour may be better developed. Mr. Waite, Glenhurst, Esher, sent two varieties of Melons—Glenhurst Perfection, not in condition, and desired to be sent again; Glenhurst Beauty, a peculiar flavoured Melon, was passed, but it is worth sending earlier in the season. A seedling Apple was sent by Mr. H. Stevens, Henley-on-Thames, and was passed. Mr. Edwards, Bickley, sent a collection of Apples, and was awarded a vote of thanks.

A basketful of Hutton Hall Sprouts, also growing plants, were placed on the table from Mr. J. McIndoe. This distinct vegetable originated in a plantation of Veitch's Exhibition Brussels Sprouts five years ago. It is really a Cabbage with side knobs. The Committee thought very highly of it, and desired to have it grown at Chiswick in accordance with the rule. We were subsequently informed that plants are now growing in the Gardens, and will be examined and the produce cooked in due time.

Messrs. Lane & Son, Berkhamstead, sent five Vines in pots, which were regarded as remarkable examples of good culture. They were trained round stakes, the bunches resting against wadding. We counted twenty on the Black Hamburg ripe and well coloured, some of them evidently nearly a pound each. A silver medal was unanimously recommended.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, and Messrs. Shirley Hibberd, R. Dean, R. B. Lowe, L. Castle, B. Wynne, G. Paul, J. Walker, E. Hill, and F. Moore. Messrs. H. Cannell & Sons, Swanley, exhibited a beautiful group of single and double Tuberous Begonias from seed sown in February, 1889, representing a large number of excellent varieties, rich and diversified in colours. The group was margined with Adiantums, and had a very pleasing appearance. Plants of Black Vesuvius Pelargoniums were also shown by Messrs. Cannell. The variety is distinguished by its dwarf compact habit, with extremely dark purplish tinted foliage and flower stems; the flowers are like the old Vesuvius, from which it is a sport. The Committee requested that it be tried at Chiswick. A silver medal was awarded for the group of Begonias. Several Pelargoniums raised by M. Lemoine, and tried in the Society's gardens at Chiswick, were submitted to the Committee, but all were passed. Mr. G. Stevens, St. John's Nursery, Putney, showed flowers of *Chrysanthemum Comte Horace de Choiseul*, a Japanese variety with

broad flat florets slightly drooping, white, yellowish centre. Flowers of Verbenas were also sent. Messrs. T. & J. Rogers, Fern Bank Nursery, Lodsworth, near Petworth, exhibited a plant of a seedling *Adiantum* like *A. macrophyllum*, but with the pinnules streaked with creamy white. The Committee asked to see it again. A plant of a hybrid *Cypripedium* much like *C. Lawrencianum* was also shown. Messrs. Veitch & Sons exhibited a box of *Rhododendron* flowers, including a dozen distinct varieties.

FIRST-CLASS CERTIFICATE.

Cyrtanthus sanguineus (J. Veitch & Sons).—An introduction from the Transvaal. The plant is about a foot high, with narrow leaves; the flowers rather bell-shaped, $3\frac{1}{2}$ inches in diameter, the acute perianth divisions somewhat recurved, the flowers borne singly on slender stems. This is a charming little plant, and was much admired.

AWARDS OF MERIT.

Tuberous Begonia Mrs. Moore (H. Cannell & Sons).—A fine single variety with large flowers, the petals broad, the colour a rich orange hue.

Tuberous Begonia Frank Beadle (H. Cannell & Sons).—A single variety, with well-formed flowers of a brilliant scarlet colour, of good substance.

Rhododendron Virgil (J. Veitch & Sons).—A bold variety, with a large truss of flowers of a soft yellow tint; the stamens red.

THE DINNER.

The Dinner, held at Cannon Street Hotel on Tuesday evening, was as successful a gathering as the Exhibition at Chiswick which it was intended to inaugurate, and when Mr. H. J. Veitch took the chair, shortly after 6 p.m., there were fully 150 horticulturists and their friends present. The Chairman was supported on his right by Mr. Henry Vilmorin of Paris, Dr. M. T. Masters, Mr. H. Pearson of Nottingham, Mr. G. Paul of Cheshunt, and Mr. Ker of Liverpool; on his left by Mr. P. Crowley of Croydon, the Rev. W. Wilks (Secretary), Mr. G. Deal, and Mr. J. Wills. At three of the side tables Mr. Shirley Hibberd, Mr. J. Wright, and Mr. A. Dean presided; and amongst others present were Messrs. J. Smith (Mentmore), W. Denning, B. Wynne, E. Molyneux, H. Cannell, J. Hudson, W. Bates, J. McIndoe, M. Dunn (Dalkeith), J. Wildsmith, J. Cheal, G. Bunyard, J. Walker (Whitton), W. Poupart, H. Herbst, G. W. Cummins, J. George, W. G. Head, G. Stevens, J. Kipling (Knebworth), J. Willard, H. Lister (Easton Lodge), G. Gordon, T. W. Sanders, and L. Castle.

After the usual loyal toasts had been proposed by the Chairman and duly honoured, the business commenced with the toast of "The Horticultural and Botanical Societies of the United Kingdom," proposed by Mr. Shirley Hibberd, who made some appropriate remarks respecting the example the Royal Horticultural Society ought to set the numerous provincial societies, and he thought in the past two years substantial progress had been made in the direction of elevating horticulture to a higher level. The toast was coupled with the name of the Rev. W. Wilks, who responded in his customary vigorous and pithy style, remarking that no one could be more pleased than he was to hear it said that the Royal Horticultural Society was making a satisfactory advance. Their desire was to extend its sphere of usefulness and render it serviceable to horticulturists, and through them to the public generally. Mr. M. Dunn also replied, stating that the Chiswick Exhibition was a good indication of the work the Society was capable of performing.

The Chairman next proposed "The Gardeners of the United Kingdom," and in doing so he commented upon the intelligence and ability characterising gardeners as a body, remarking that their remuneration was rarely proportionate to the knowledge required, and the results attained showed that much was done from a love of the occupation. He referred to the numerous difficulties gardeners have to contend with, the patience, perseverance, and foresight needed, and instanced amongst a gardener's trials the fact that reductions in the expenditure of large establishments usually commenced in the garden. But there is a bright side to the matter, for gardeners perform an important service to the community, doing much to elevate taste and improve moral feeling throughout the country. Referring to allotment gardening, he pointed out that much may be done in this direction in coming years, and gardeners might do much to instruct those engaging in this work. Mr. J. McIndoe and Mr. E. Molyneux replied, the latter giving an instance of what can be effected in cottage garden and allotment societies from his own experience in the Bishops Waltham district.

In proposing "The Visitors," the Chairman mentioned Mr. Henry Vilmorin as one of the best representatives they could have of the Continental seed trade, and complimented him upon the systematic arrangement and admirable management distinguishing their great business in Paris. M. Vilmorin responded in excellent English, stating that he had for many years been familiar with British horticulture and gardeners, and he came over on this occasion with great expectations respecting the Vegetable Conference, and had not been disappointed. It was the most comprehensive display of the kind he had seen, and the Society had good reason to be satisfied with the result of their efforts.

"The Horticultural Trade" was next proposed by Mr. G. Deal, Mr. N. Sherwood replying; and it was followed by "The Committee of the Vegetable Conference," proposed by Dr. M. T. Masters; and Mr. A. Dean in reply said that his *confrères* and himself had endeavoured to make the vegetable gathering a success, and he stated that they owed much to their Chairman and Mr. Shirley Hibberd, Mr. J. Wright and Mr. Wythes also having rendered good service in the work of preparation.

"The Health of the Chairman," proposed by Mr. Shirley Hibberd, was received with acclamation, rendering, as the proposer justly observed, any eulogy on his part quite unnecessary.

Mr. Veitch expressed his gratitude for the manner in which his name had been received, and mentioned that they must not omit to thank Mr. A. Barron for his good services in the matter. He knew that nothing could add to his credit, but the fact should be recorded. The thanks of the meeting were also due to Mr. Wills for the handsome Palms, and to Mr. H. Cannell for the Tuberous Begonia flowers employed in the decoration of the room and tables.

An excellent programme of songs and music was arranged by Miss Mary Belval, and carried out by herself, assisted by Miss Harriett Boutall, Mr. Wilford T. Price, and Mr. John Bartlett, and at a comparatively early hour in the evening the visitors separated well satisfied with a most enjoyable gathering.



FRUIT FORCING.

VINES.—Midseason Houses.—Vines from which the Grapes have been cleared should now be divested of their laterals down to the principal buds, that are to be retained for next year's fruiting, doing so, however, without injury to the old leaves, as upon their preservation depends the maturation of the buds, which should be plump and well ripened. A free circulation of air is necessary, and in the case of young Vines, or where there is the least doubt about the thorough maturity of the wood, fire heat will be necessary. When the laterals have been removed clear the old mulching off the borders, and give a top-dressing of turfy loam, with about a sixth of manure and a sprinkling of bone meal. If the roots have not penetrated the mulching remove the soil down to them and supply fresh compost, but not covering them deeply; 2 or 3 inches depth is quite sufficient. In the case of inside borders afford a moderate watering, and allow those outside to have the benefit of October rains, but instead of adding manure to the loam mulch the surface with 3 or 4 inches of fresh horse droppings, covering with dry litter or bracken by the end of October or early November. In the case of borders only partly made a breadth of 2 feet may be added to the front, choosing a dry day for the operation, mulching with horse droppings, and cover as before advised.

Late Muscats.—If not thoroughly ripe continue rather sharp firing in the daytime with a free circulation of air, and enough at night to prevent the deposition of moisture on the berries. Continue this until the Grapes are finished, when a gradual reduction of temperature must take place, about 50° at night being necessary for Muscats after they are matured. Moisture must be kept down by a buoyant atmosphere, a pent up air with a sudden increase of temperature from sun being sure to induce moisture to condense on the berries, which will cause spot, and then the Grapes will speedily decay. The inside border should be covered with clean dry straw or matting to prevent moisture rising.

Late Grapes.—Make sure that the berries are well finished quite up to the shank before ceasing the needful aid from fire heat. Alicante and Lady Downe's invariably finish better than Mrs. Pince, which, though the best flavoured of the late or thick-skinned varieties, is somewhat difficult to treat satisfactorily, the berries not finishing well up to the shank. Well grown it has the full flavour of Black Muscat. Gros Guillaume and Gros Colman require more time, as also do the white varieties, Syrian, Trebbiano, and Calabrian Raisin. Indeed all thick-skinned Grapes require a long time to mature after being apparently ripe, consequently a temperature of 55° should be assured, with a rise of 5° to 10° by day, and a circulation of air until the foliage is giving indications of falling, when a temperature of 50° will be sufficient. The inside border must not be allowed to become too dry. If necessary water in the early part of a fine day, and cover with a dry mulch as a safeguard against damp, and a repetition of the watering. Outside borders will be quite damp enough, and should be covered with lights preferably, or some other means employed to throw off heavy rains.

Late Hamburgs.—These colour and finish when it is hopeless to do anything more with the thick-skinned varieties. They should have a temperature of 60° to 65° at night, and 70° to 75° in the daytime, with a circulation of air constantly, not allowing the borders to become dry, but giving a good watering if they are only partially advanced in ripening, and mulch with rather short dry material. Only restrict the laterals to prevent overcrowding, but after the Grapes are finished avoid further extension, yet not reducing the foliage much, as this assists Hamburgs to keep their colour.

Houses of Ripe Grapes.—Hamburgs and all thin-skinned varieties of Grapes require frequent examination for the removal of decayed berries. Damp being their greatest enemy it should be prevented as much as possible by fire heat in the daytime, accompanied by free ventilation, allowing the house to cool before night.

Young Vines.—Vines planted this spring or in early summer will

need every encouragement in keeping the foliage clean and healthy, also keep the laterals away from the principal leaves in order that they have free exposure to light and air, especially those at the base of the canes, so that the buds to which the Vines are to be pruned may be thoroughly matured, and the wood well ripened. In order to insure the ripening of the wood maintain a genial warmth by day, and throw the house open at night.

FIGS.—Early Forced Trees in Pots.—Examine the roots, and as it is not advisable to increase the pot room, remove a few inches of soil from the base, cutting back the roots, and supply fresh fibrous loam, adding about a tenth of old mortar rubbish and a sprinkling of crushed bones, providing good drainage. Remove the loose surface soil and apply the above compost, adding a fourth of well decomposed manure. Afford a good watering, place the trees where they can have plenty of air with shelter from heavy rains and frost.

Planted out Trees.—Keep the trees dry at the roots, but avoid extremes, and a drier condition of the atmosphere will tend to promote the perfecting of the growth. As soon as the latest trees are cleared of their crops keep them down at the roots and the house well ventilated in favourable weather. Any root-pruning or partial lifting should be done when the leaves show indications of falling.

THE FLOWER GARDEN.

Dahlias.—Already we have had a rather severe frost, and in cold low-lying localities many of the Dahlia leaves have been blackened. Last year all were completely spoiled during the first week in October, and it is wise therefore to be prepared for eventualities. All the plants should be examined, those raised from seed being especially taken note of, any not worth keeping being duly singled out and marked. Those with names should be re-labelled if need be, and in any case the height of each variety ought to be marked on the label or entered in a book. It will be useless to attempt re-labelling after a severe frost has crippled the plants, and unless, therefore, it is done at once much confusion may be the result next spring. After the foliage and flowers have been blackened by frosts the plants should be cut down to within 8 inches of the tuberous roots, and be then lifted without damaging the latter. Store them stalk downwards in a dry open shed for a few days, or till they are thoroughly dried, after which they should be packed closely together on the floor or on a bench in a dry cool room or shed, covering all but the upper portion of the stems with fine dry soil. In very cool sheds it may be further necessary to cover with mats, sacking, or old carpets in severe weather, but, as a rule, no further trouble need be taken with them.

Tuberous Begonias.—Much that has been advised concerning Dahlias also applies to these. They can be potted up fairly well from the open ground, and will flower for a few weeks longer in a cool house or conservatory. Those left to face the weather ought not to be disturbed till the tops are injured or cut down by frosts, when the tubers should be lifted, a small quantity of soil being left on them, and after they are slightly dried all ought to be packed closely together in boxes of moderately dry soil. They can be kept in any cool place, taking care to protect them from severe frosts and drip. Seedlings still in the seed pan or the boxes in which they were pricked out are best left undisturbed, being kept cool and dry. They will be very serviceable next season.

Zonal Pelargoniums.—These will withstand a moderately severe frost, but the choicer varieties, or any of which an insufficiency of cuttings have been taken, ought to be lifted before the points have been blackened by frost, or otherwise they will keep badly. All that are to be kept ought to be carefully forked out of the ground as soon as the state of the weather or the appearance of the beds warrants those in charge to break them up. It is useless to attempt preserving soil with the roots, but as few of the latter should be damaged as possible. First pinch off all the old or fully grown leaves, preserving the smallest at the points of the shoots only; each plant may then be placed singly into as small pots as the roots can be crowded, or better still, from five to seven may be packed into 5-inch or rather larger sizes. In any case moderately moist soil should be used, and this must be well rammed about the roots. They will be more certain to recover somewhat and form a few roots if all are placed in gentle heat for about a month, sufficient water only being given to prevent shrivelling. During the winter they ought to be kept in a comparatively cool dry house, only enough water being given to just keep them alive. If they cannot be given the benefit of a little heat when first potted they must be placed in a cool dry house or pit and kept dry at the roots. Large quantities of Pelargoniums are frequently wintered in coach houses, spare bedrooms, and other fairly warm dry positions where only a moderate amount of light reaches the plants. In all such cases it is of the greatest importance that all the old leaves be picked off at potting time, and that the plants be kept quite dry at the roots. They must be kept in a dormant state. It is not yet too late to put in strong firm cuttings, but these must be placed under glass, preferably on shelves, at once, and not watered for about a week.

Various.—Carpet beds may be preserved in an attractive state for several weeks longer if protected with blinds or mats every cold night. Any choice "dot" plants there may be used in these or sub-tropical beds, and which are plunged in pots, can be taken under cover of a house every night, or whenever there are signs of a frost, and returned in the morning. It is also advisable to ward off cold rains as much as possible. If stock plants of Coleus, Iresine, and Alternanthera are needed these must be potted before being badly crippled by frost. Not much of

the soil should be preserved with the roots, as this is usually too close and heavy for plants in pots, and sours quickly. Avoid overpotting, and place the plants in gentle heat at once. Heliotropes, Ageratums, and Petunias as a rule cannot be well potted, but some, if cut rather hard back, will survive. Fuchsias ought not to be lifted and stored in pots or boxes until after the principal portion of the leaves have fallen. Marguerites can be readily potted, and will flower in a conservatory or greenhouse for some time longer. Strong autumn-struck plants are the best for window boxes and vases, or for an early display in any position. *Salvia patens* having tuberous roots may be treated exactly the same as Dahlias, or if not numerous the roots may be stored thickly in boxes of fine soil. Abutilons are readily potted, and the majority, whether flowering varieties or grown for their fine foliage only, will help to brighten a conservatory. Asters are in many instances past their best, but any not so forward may be potted, and will be found very serviceable. As a rule Dahlias do not move well out of the open ground, but occasionally plants carefully lifted and potted pay well for the trouble. Succulents, notably the choicer *Echeverias*, *Pachyphytums*, and *Sempervivums* must not be left in the open till a severe frost cripples them, or otherwise they will keep badly through the winter. The middle of October is, as a rule, quite early enough to put in cuttings of *Violas* and shrubby *Calceolarias*. They will be firmer by that time, and the less growth they make before midwinter the more serviceable they are subsequently.

PLANT HOUSES.

Housing Plants.—Tender plants are not safe outside after the close of this month without some protection. It is important that all available structures be thoroughly washed and cleaned before the plants are arranged in them. All needing stove or an intermediate temperature should first be provided for. The pits and frames they have occupied can be devoted to the protection of plants that have been grown outside. All plants that need cleaning should be attended to before they are arranged in their winter quarters. In the neighbourhood of towns it is not only necessary to wash the glass inside, but it must be done outside as well. The latter can be left, however, until all plants are safely housed, and during showery weather outside washing does not take up much time.

Shading.—Discontinue all shading, take the blinds off, and thoroughly dry them before they are stored away for the winter. If placed away damp they will be useless when they are required next spring. Where thicker blinds are used during the winter on stoves and other warm houses place them on at the same time as the summer blinds are removed. Covering the roof of warm houses during cold severe weather should be more generally practised. It prevents the overheating of the pipes, which is of the utmost value for the well-being of the plants, and the saving in fuel will soon more than cover the first outlay for blinds.

Callas.—Lose no time in lifting those planted out, as although they will bear a few degrees of frost it checks them. Carefully shake the soil from the roots, and place plants into convenient sized pots in a compost of good loam and one-third of decayed manure. One large crock, even in 10-inch pots, is ample drainage for them. Pot firmly, soak the soil with water at once after potting, and syringe two or three times daily until root activity has commenced. The plants may be stood outside for ten days or a fortnight before they are housed, but where they can be covered with a piece of tiffany. Lift also *Salvias*, *Eupatoriums*, *Bouvardias*, and other plants of a like nature. These should be placed in cold frames, and shaded for a time from the sun.

Solanums.—Where these have been plunged outside in pots, and have rooted out at the base and over the rim, no harm will be done by cutting them off. If stood afterwards in a dry place the foliage is liable to turn yellow. Place them in a frame for a fortnight, and keep the soil moist at their roots, and syringe freely. This is all that is needed to keep the foliage fresh and healthy.

Hydrangeas.—If cuttings have been rooted and stood in a sunny position outside it is necessary to look over the plants before they are checked or injured by frost. Those with plump flower buds can be left outside until frost sends them to rest, but those in a backward state may be placed in a sunny position under glass on a shelf, and it is surprising how quickly the buds will plump up. Plants subject to this treatment are not, as a rule, good for early forcing, but will prove all that will be required for successional purposes.

Chrysanthemums.—All plants required for flowering during November should be placed under glass. The early frosts of last year, and the slight warning we have already received this year, warrants the advice that they should be placed under glass as quickly as possible. Those required for late flowering should be so arranged that slight protection can be given when necessary. Bushes for decoration are being arranged three rows together. Long canes are placed into the ground on each side, and tied together in the centre. An upright stake is placed in the centre, to which these are secured. A few lengths of tar twine run along each side completes the arrangement as far as the framework is concerned. Long strips of tiffany are then secured at the top and rolled up and tied against each other. With this or any similar provision large quantities can have the covering drawn over them in a very short time, the tiffany only needs securing to the stakes at the base. Where practicable the pots should be plunged, which prevents the plants being rolled about by rough winds. When these plants are first housed discontinue feeding for a few days, and give abundance of air. Syringe liberally two or three times during bright days. Syringe lightly just before dark.

Carnations.—Tree varieties should be housed at once, and if aphides

exist upon their shoots fumigate them slightly with tobacco. Arrange them in a light airy position on a moisture-holding base. Water the plants carefully, but do not allow the soil to approach dryness.

Azaleas, Heaths, and Epacris.—Place these in their winter quarters, as heavy rains will soon prove injurious to them. Arrange them on a base covered with gravel or ashes. The flowers of Heaths and Epacris failing to come forward is frequently due to placing the plants on dry stages, and maintaining about them a dry atmosphere. Where plants have to be placed on dry stages the pots and stages should be frequently syringed. On all fine days the plants will be benefited by being syringed lightly twice daily.

THE BEE-KEEPER

THE HEATHER SEASON IN HALLAMSHIRE.

THE past contributions of "A Lanarkshire Bee-keeper" have been very interesting, and as the Heather here behaves very differently from that in his locality, a few notes on the subject may be acceptable.

He speaks of bees filling supers from Heather in July, and swarming when working on the Heather. Here the Heather yielded no honey before August 10th, which was earlier by five days than the average, this being the earliest date I have ever known. How is it that the Heather in Scotland yields honey so much sooner than here? Perhaps the reason is they get more sunshine in the north, which helps it forward. It is a fact not always remembered, that the sun shines longer in summer the further north we go, and this may account for the wonderful Scotch Heather harvests.

I have never seen or heard of bees swarming while the Heather is in bloom here, no matter how strong they might be, and I often have them supersede their queens whilst it yields honey; in fact, I have had far too many queens superseded this year.

This year has not been good, the best days being August 30th and September 10th; from the 14th to the 28th, when the Heather was at its best, the weather prevented their procuring anything, but it has yielded longer than usual this year, and most stocks will yield twenty 1-lb. glass sections sealed over, with 30 to 40 lbs. in the combs below. I feel quite disappointed, as I never saw the Heather look so well before, and the only consolation is we had none last year.

Our friend speaks of one stock collecting 30 lbs. in one day, and as I understand him to say that he weighed the hive in the evening I think a large deduction should be made to obtain the equivalent in ripe honey—that is, assuming his Heather honey is anything like ours. When first gathered it is as thin as water, and is scarcely sweet. The bees evaporate it down, which, with the honey used as fuel, will at least reduce the weight to one-fifth. In 1887 I had one stock of hybrid Syrians increased 70 lbs. in weight, all sealed honey, which was gathered in seven days, but I never saw Heather honey so thick when first gathered as it was that year.

I do not question or doubt the possibility of bees collecting 30 lbs., or even 100 lbs., of crude Heather nectar in one day; but I am rather sceptical that they can possibly ripen 30 lbs. per day. This brings me to an idea I have been thinking of to help them—viz., all who have had any experience with Heather honey know that it cannot be extracted when ripe, though when fresh it is extracted most readily. Even on the third day, in fact, every bit of Heather honey can be extracted if the combs are run through the extractor once in three days. I have been thinking that if the super combs were extracted every alternate day the watery part could be separated by centrifugal force, like cream is separated. This water would contain a large portion of the bitter flavouring,

and could be extracted and added to the honey or not. I do not think it could be made to pay on a small scale, but as there is no limit to the number of stocks we can locate on the Heather, a "separator" and horse to work it would pay well with 100 stocks; then the bees could be kept at work collecting, and the market supplied with bottled Heather honey without having to destroy the combs.

The Punie bees pure have outstripped all others again, but I am disappointed with Punics crossed. One lot, Carniolian queen mated to Punie drone, has, however, done remarkably well, but all mis-mated Punie queens have done badly.

With regard to glass sections I think I cannot do better than relate an unpleasant circumstance that happened on September 7th, just to show what these will stand in the way of rough handling, as grave doubts have been expressed about it being possible to safely send them a journey, though I demonstrated that they could travel for months through the post.

A well known member of the Sheffield County Council and myself were up at the moors in a dog cart. I placed four filled glass sections in a green gin box, which I use for makeshift hives, and filled the box with sealed ordinary combs in frames, and placed the box in the trap behind. All went well till we were nearly home, when turning a corner in the dark at full trot we ran into a heap of stones, and over we went, horse, trap, and everything. The box with the honey was thrown into the road as well as ourselves; and while I was helping to extricate the horse some of the crowd began to examine the honey. However, when I could leave the horse I found three of the sections quite sound, except some slight scratches made by the crowd; the fourth had a top and one side torn off, otherwise it was sound, this I also think was done by the crowd. The combs in the frames were all broken out. The sections were the least injured of any. So that if they will stand being thrown out of a trap into the middle of a hard road, without being packed in any way, I think they will stand any risk they may be subjected to in the ordinary way.—A HALLAMSHIRE BEE KEEPER.

TRADE CATALOGUES RECEIVED.

Bruant, Poitiers, Vienne, France.—*Catalogue of Plants.*
H. Bennett, Shepperton.—*List of New Pedigree Seedling Roses.*
Dicksons, Chester.—*Select Roses.*
J. Walters, Exeter.—*Catalogue of Roses.*
T. Warner, Leicester.—*Select Fruit Trees.*
Dicksons & Co., 1, Waterloo Place, Edinburgh.—*List of Select Roses.*
W. Crossley, 13, Vicar Lane, Leeds.—*Catalogue of Roses, Bulbs, &c.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Covering Bulbs (G. W.).—Coarse sand will answer, but we prefer cocoa-nut fibre refuse to any other material; it is cheap, and useful

for many purposes in gardens. Great pressure compels us to defer our reply on the other points in your letter till a future issue.

Drawing (A. D.).—Probably if you write Messrs. Cassell & Co., Ludgate Hill, London, they may be able to send you a list containing what you require. The subject is treated in their "Popular Educator," and possibly they may have a treatise on the subject. A good local schoolmaster would show you how to draw a plan to scale.

Offsets on Crinum (M. D.).—Under the circumstances we should not attempt to separate the offsets from the plant, but wait until the next resting period, and this will depend on the temperature in which the plant is kept and the treatment accorded. Their removal during active growth might injure the plant materially.

Caterpillar (W. H.).—The specimen sent is a nearly full-grown caterpillar of the Elephant Hawk Moth (*Chærocampa Elpenor*), so called from its mode of extending the head while feeding. It usually feeds upon some of the species of Epilobium or Willow Herbs, but sometimes occurs upon the Vine in houses or out of doors, eating only the leaves, and in numbers too small to be injurious.

Ashes from Vegetable Refuse (A. D.).—You are wise in not allowing the chaff that is mixed with the stems and seed of Charlock to be mixed with manure for the land. Reduce the whole, with all the vegetable refuse you can collect, to ashes, and the residue will be valuable for the garden. It will be good for all kinds of fruit trees, also for sowing in the drills for various kinds of seeds and Potatoes.

Bunches of Flowers (M. C.).—The number of flowers sold in bunches varies considerably according to the season. An article in our issue of September 25th states that 120 spikes of Lavender are usually sold in bunches; more if the spikes are small. Single Dahlia bunches usually contain twelve good flowers, but often more. Cannot you consult a florist in the town in which you reside? There is no work on the subject.

Insects on Strawberries (W. R.).—The extremely small portions of leaves sent, and these resting in the post over Sunday, were completely shrivelled, and what insects may have been on them have shrivelled to the vanishing point. It is not improbable the plants have been attacked with red spider and mildew, and the lower temperature with frost imminent or actual will check the increase of both. If the plants are old they may be exhausted and peculiarly liable to attack by those enemies. If young the soil may be deficient in the requisite matter for supporting healthy growth. If you wish for further information, and will state the varieties and age of the plants with the nature of the soil, we shall be glad if we can give you further advice.

Wood-boring Caterpillar (J. L.).—This is a caterpillar of the wood leopard moth (*Zeuzera Aeseuli*) which does every year a considerable amount of injury to a variety of trees. Amongst the fruit trees it seems to infest the Pear most frequently, but also attacks the Apple, Plum, and Walnut, probably remaining in the larval state the greater part of two years. Sometimes as many as fifteen or twenty caterpillars have been discovered in a small Ash, a tree particularly visited by the moth, which lays about 300 eggs. It is recommended to force up the holes, whenever these are seen, a flexible wire, by which the caterpillar within may be often killed, and it is also a good plan to throw up the holes, by means of a syringe, some insect-killing liquid, such as a compound of tobacco and softsoap, suitably diluted. This species would, no doubt, be much more abundant were not the moth eagerly eaten by birds.

Mealy Bug on Vines (J. C., Somerset).—Your Vines are infested with this offensive pest, and it is difficult to eradicate from a greenhouse which always, we presume, contains plants. Fumigation is of no use, and a thorough cleansing of the house, plants, and Vines is imperative. When the leaves turn yellow take them off and burn them, not letting any of them fall among the plants or to the ground. In that way you may clear out thousands. The cleansing cannot be thoroughly done till the Vines are pruned. The insects lurk, not only in the bark, but in bits of matting attached to the Vines, in woodwork, especially on the under sides of shelves, in dry soil in pots and borders, and in all sorts of what you may consider the most unlikely places. The Grapes you send are unfit for table. You have a difficult task before you in extirpating the pest. Some of the leaves you send are scorched, and the appearance of those that are not suggests that the house has not been ventilated in the best manner. In all probability also the roots need more support than they obtain for the proper sustenance of the Vines.

Roses for Buttonholes (S. T.).—Tea Roses are among the most suitable for this purpose, and there are a few gardens where the soil is good and the atmosphere pure in which they, with a little protection, may not be grown. Free and good are Niphetos, Madame Falcot, Homère, Madame Van Houtte, Madame Lambard, Safrano, Perle des Jardins, Comtesse Riza du Pare, Madame Jules Margottin, and Souvenir de Paul Neyron. The old crimson China Rose and Cramoie Superieure are good for your purpose, as also are the Noisettes Triomphe de Rennes and Aimée Vibert, with Baronne de Maynard, Boule de Neige, and Louise Darzens. Moss Roses are indispensable—the common, crested Moss de Meaux and Little Gem (W. Paul), the latter being very charming. Among the most free and suitable of the Hybrid Perpetuals are Jules Margottin, Général Jacqueminot, and La France. We have probably named sufficient for your purpose. The advisability of digging-up and

planting your established Roses deeper depends on the depth at which they are planted now. If they grow and flower freely we should let them alone; if not, you might try the plan you suggest, but on this point we cannot advise, since you have not stated the length of the stocks.

Leather Parings (O. R.).—They are very good for furnishing nitrogen to plants, but nothing more. Of this nitrogen clean samples contain as much as does nitrate of soda; but it does not follow that they are therefore of equal value, as in the one the nitrogen is at once available but in the other it is not. Still, good samples are worth £2 or £3 per ton to manufacturers of manure, and if you could find a market for them the money they might fetch would be better spent by you in the purchase either of manufactured or ordinary dung, for by themselves they are not true manure. But if a tenth were added to ordinary manure, and overheating provided against by keeping the heap fairly moist, the value of the manure would be doubled. Allowing them to heat by themselves is almost certain to cause loss of nitrogen, as the sense of smelling would inform anyone; but in the bulky manure the ammonia would be absorbed and preserved. The fact that the farmers in your district will not have the material you mention for the carrying only proves the necessity there is for farmers becoming acquainted with agricultural chemistry. We could name a district where they will not look at sewage, but cheerfully pay for and convey long distances broken bottles, earthenware, tin cans, cinders, and a little town's dust! Tanned refuse, such as bark, is of little use except for mixing with heavy soil to render it lighter. The process of tanning adds no manurial value to anything. Fine leather shavings unmixed with other matter are used for fruit trees in the London market gardens, also for Filberts and Hops.

Dr. Hogg Grape (Cambrian).—We cannot account for your failure with this Grape, for it is a good grower and bearer, and usually sets freely; but if you expect large berries, like Muscat of Alexandria, you are bound to be disappointed. It belongs to the Frontignan class. The following is Mr. Barron's description and estimate of merit as they appear in "Vines and Vine Culture":—"Growth free and vigorous, producing firm, moderate-sized wood, which always ripen well; very fruitful. Leaves medium sized. Bunches long, measuring from 12 inches to 18 inches, and tapering to rather a narrow point; shoulders long and rather loose, drooping, always well set. Berries medium sized, round, on strong stalks. Skin membranous, very clear, almost transparent, and, when quite ripe, assuming an amber tint. Flesh firm, very sweet, and with a rich Muscat or Frontignan flavour. This is a seedling raised by the late Mr. Pearson of Chilwell, about 1869, from Duchess of Buccleuch, and was exhibited before the Fruit Committee in 1871, and awarded a first-class certificate. It is now very general in cultivation, taking the place of Chasselas Musqué. Succeeds well in an ordinary vinery, but requires a little more heat than the Black Hamburgh to ripen thoroughly. It is, however, one of the hardiest of its class." If your Vine is healthy you may inarch a Foster's Seedling on it as you propose, if you prefer this variety, which is a good grower and free bearer. The other you mention is not nearly so certain to succeed with you as is Dr. Hogg.

Orange Trees Unhealthy (R. O.).—An application of lime water would not have the good effect you anticipate. Defective root-action is the chief cause of the unsatisfactory condition of the trees, and undoubtedly it would be better if you could prevent the temperature of the house falling so low in the winter. You can do little to them now, but may improve them in the spring, and in the meantime avoid over-watering. As soon as signs of fresh growth are apparent we should dig out the soil from the tubs quite to the bottom, and remove it as near to the stems as possible without materially disturbing, or at least not injuring, the roots. We have seen much more than half the soil thus removed, and by adding fresh, such as turfy loam and a liberal admixture of crushed charcoal, bones and wood ashes, the roots being carefully placed in this, and the whole made as firm as the soil not removed, water being judiciously applied, and old trees were made young again. It does not at all follow if the roots are few and the tubs large that they should be filled at once with soil; but the soil may be supported with a wall of turves several inches from the sides of the tubs, precisely on the principle of making a Vine border in sections. By adopting this plan and keeping the plants as warm as possible in the spring, syringing freely in fine weather, and keeping the foliage scrupulously clean, the trees will improve. The surface soil immediately round the stem should also be removed, and all dead and dying branches cut out; indeed, as soon as roots take possession of the fresh soil rather close pruning would result in stronger and healthier growths.

Scabbed and Cracked Pears (J. R. G.).—There may be more than one cause of cracking in Pears, but your examples are in bad plight—indeed one of the worst cases we have seen. It is the work of a fungus called *Cladosporium dentriticum*, *Walls*, which grows on the young twigs and leaves, also on parts of the flower, preventing some of the fruit setting, and those that do set are injured and crippled in growth, and are mostly of little value, through the cracking of the skin of the fruit as it ripens. The fungus gives rise to black spots on the leaves a quarter to half an inch wide. On the fruit it occasions similar spots, irregularly rounded, forming a depressed black spot. The mycelium of the fungus does not penetrate far into the fruit, but remains almost wholly in the cells of the epidermis. The spots not unfrequently run together, covering a large portion of the surface of the fruit. There is no known remedy; attention, therefore, must be directed to prevention,

and we know of nothing so effectual as lifting and replanting the trees in good fresh loam—the top spit of a pasture. Certain varieties are peculiarly liable to injury by the fungus, and it usually attacks those for which the climate is unfavourable, as the sorts produce worthless fruit on pyramid, espalier, and other form of trees in the open, while against walls with south or west aspects trees produce clean and fine fruit. Diseased trees and all fruits that assume the diseased condition should be destroyed. Selection should be made of varieties that succeed in the locality. Those that are known to be peculiarly liable to injury from the fungus should not be planted, so as to prevent, as far as practicable, liability to infection.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*C. J. N., Loughgall*).—1, Golden Reinette; 2, None-such; 3, Scarlet Pearmain; 4, Blenheim Pippin; 5, Lewis' Incomparable. (*E. J.*).—1, Beurré Clairgeau; 2, Vicar of Winkfield; 3, Pit-maston Duchess. (*A. D.*).—The Apple appears to be Cox's Pomona. (*H. W.*).—2, London Pippin. 3, Perhaps a small Russian Transparent. 4, Dumelow's Seedling. 5, Ribston Pippin. 6, Scarlet Nonpareil. The plant is *Hieracium aurantiacum*.

COVENT GARDEN MARKET.—SEPTEMBER 25TH.

Trade and prices remain the same.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 4	0	Oranges, per 100	4 0 to 9 0
„ Nova Scotia and				Peaches, dozen	2 0 8 0
Canada, per barrel	0	0 0	0	Plums, $\frac{1}{2}$ sieve	3 0 4 6
Cherries, $\frac{1}{2}$ sieve	0	0 0 0	0	Red Currants, per $\frac{1}{2}$ -sieve	0 0 0 0
Grapes, per lb.	0	6 2	6	Black „	0 0 0 0
Lemons, case	10	0 15	0	St. Michael Pines, each	2 0 6 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 8	0	Lettuce, dozen	0 9 to 1 3
Asparagus, bundle	0	0	0	Mushrooms, punnet	0 6 to 1 0
Beans, Kidney, per lb. ..	0	2	0 to 4	Mustard & Cress, punnet	0 2 to 0 6
Beet, Red, dozen	1	0	2 0	Onions, basket	3 0 to 4 0
Broccoli, bundle	0	0	0 0	Parsley, dozen bunches ..	2 0 to 3 0
Brussels Sprout, $\frac{1}{2}$ sieve	0	0	0 0	Parsnips, dozen	1 0 to 0 0
Cabbage, dozen	1	6	0 0	Potatoes, per cwt.	4 0 to 5 0
Capicums, per 100	0	0	0 0	" Kidney, per cwt. ..	4 0 to 7 0
Carrots, bunch	0	4	0 0	Rhubarb, bundle	0 2 to 0 0
Carlinflowers, dozen ..	2	0	4 0	Salsify, bundle	1 0 to 1 6
Celery, bundle	1	6	2 0	Scorzoner, bundle	1 6 to 0 0
Coleworts, doz. bunches ..	2	0	4 0	Shallots, per lb.	0 3 to 0 0
Cucumbers, each	0	3	0 6	Spinach, bushel	3 0 to 4 0
Endive, dozen	1	0	2 0	Tomatoes, per lb.	0 4 to 0 6
Herbs, bunch	0	2	0 0	Turnips, bunch	0 4 to 0 0
Leeks, bunch	0	3	0 4		

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.		
Arum Lilies, 12 blooms ..	3	0 to 6	0	Lilium longiflorum, 12			
Asters, per bunch, French ..	0	0	0	blooms	2	0 to 5	
" doz n, English ..	3	0	6	0	Maidenhair Fern, doz.		
Bouvardias, bunch ..	0	6	1	0	bunches	4	0
Carnations, 12 blooms ..	1	0	3	0	Marguerites, 12 bunches ..	2	0
" 12 bunches ..	4	0	9	0	Mignonne, 12 bunches ..	1	0
Chrysanthemums, dozen					Nyctaginis or Forgetmenots		
blooms	1	0	3	0	doz. bunches	1	6
Chrysanthemums, dozen					Pansies, dozen bunches ..	1	0
bunches	2	0	6	0	Pelargoniums, 12 trusses ..	0	6
Clove Carnations, 12 bunches	0	0	0	0	" scarlet, 12 bunches ..	3	0
Corolla flower, doz. bunches	1	0	3	0	Pinks (various) 12 bunches	0	0
Dahlias, dozen bunches ..	2	0	6	0	Poppies, various, 12 bunches	2	0
Eucharis, dozen ..	3	0	6	0	Roses (indoor), dozen ..	0	6
Gaillardia picta, 12 bunches	2	0	4	0	" Mixed, doz. bunches ..	3	0
Gardenias, 12 blooms ..	2	0	4	0	" Red, dozen bunches ..	4	0
Gladioli, per bunch ..	0	6	1	6	" " 12 blooms	0	6
Gaillardia branchyensis, ..					" Tea, white, dozen ..	1	0
dozen sp. ayt. ..	1	0	1	6	" Yellow	2	0
Helianthus or sun flower,					Straips, doz n bunches ..	0	0
dozen bunches ..	3	0	4	0	Stephanotis, doz. sprays ..	3	0
" large, dozen blooms ..	0	6	1	0	Stocks, dozen bunches ..	3	0
Lapageria, 12 blooms ..	1	0	2	6	Sweet Peas, doz. bunches ..	2	0
Lavender, dozen bunches ..	0	0	0	0	Sweet Sul an. ..	3	0
Lilium auratum, 12 blms ..	2	0	4	0	Taberoseas, 12 blooms ..	0	6

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to 12	0	Fuchsia, per dozen	3	0	to 9	0
Arum Lilies, per dozen ..	0	0	0	0	Geranium, Ivy, doz. ..	0	0	0	0
Arbor vitae (golden) dozen	6	0	24	0	Hydrangea, per dozen ..	9	0	18	0
Asters, 12 pots.	3	0	6	0	Lobelia, per dozen	0	0	0	0
Bougainvillea, various, per doz.	4	0	12	0	Marguerite Daisy, dozen ..	6	0	13	0
Balsams, per dozen	0	0	0	0	Mignonne, per dozen ..	0	0	0	0
Caladiums, per doz.	0	0	0	0	Moss, per dozen	0	0	0	0
Calceolarias, per dozen ..	0	0	0	0	Myrtles, dozen	6	0	13	0
Christmas Rose	0	0	0	0	Nasturtiums, per dozen ..	0	0	0	0
Chrysanthemums, dozen ..	6	0	16	0	Palms, in var., each ..	2	6	21	0
Cockscombs, per dozen ..	3	0	6	0	Pelargonium, scarlet, 12	2	0	4	0
Dracena terminalis, doz. 24	0	42	0	0	Pelargonium, per dozen ..	0	0	0	0
Dracena viridula, doz.	12	0	24	0	Rhodantha, per dozen ..	0	0	0	0
Erica Cavendishi, doz.	0	0	0	0	Saxifraga pyramidalis, ..				
Egonymus, var., dozen ..	6	0	13	0	per dozen	0	0	0	0
Evergreens, in var., dozen	6	0	24	0	Solanums, per dozen ..	6	0	12	0
Ferns, in variety, dozen ..	4	0	18	0	Spiraea, per dozen	0	0	0	0
Ficus elastica, each	1	6	7	0	„ palmata, per doz.	0	0	0	0
Foliage plants, var., each	2	0	10	0					



LANDLORDS' FARMING.

SOUND policy is it always to encourage tenants to drain land by the landlord supplying the pipes, upon condition that the tenant makes the drains subject to the approval and inspection of the agent. Had this been done more generally the landlords' burden now would be much lighter than it is, for the only thing to do with a neglected farm falling in hand is to bring it into sound condition as soon as possible, and drainage forms the basis of all such improvement. It is not to be set aside indefinitely, but is of such primary importance that it must have due attention before any manure is used. To apply manure to wet land is mere waste, the inert soil derives no real benefit from it, and disappointment follows the sowing of any crop. Singular indeed is the ignorance which still prevails among farmers about the effect of and necessity of drainage. During the recent harvest a tenant farmer was loud in his complaints about a small crop of Wheat on heavily manured land which he had folded twice and then manured. He is a sharp shrewd man of business, and we doubt not that our explanation of the want of drainage being the cause of the failure, and why it was so, will be turned to practical account. But is it not remarkable that a man born and bred to farming should arrive at middle age and yet remain ignorant of a matter of such vital importance? He at first said that he did not think the land was wet, but we were bound to show that the failure was a simple case of cause and effect; that without a free passage of water through and from the land there could be no circulation of air in it, no absorption of fertilising gases by it, no kindly root-action in it, so that anything like robust growth and full crops were impossible. If only farmers could grasp the full significance of all this and would test the condition of the soil which they essay to cultivate, and not trust so much to the imagination, it would be greatly to their advantage.

In land drainage no rule can be laid down, the nature of the soil and subsoil being the only safe guide. The drains may have to be any distance apart, from 15 to 30 feet, and any depth from 20 to 40 inches, or even more. It is true that capillary attraction is active in clay, but it is only in exceptional cases that very deep drains are necessary in clay. We may mention once more that deep drainage is intended to keep the water table so low—so far from the surface—as to prevent the excessive rising of moisture from it by attraction, and so check that excessive evaporation which tends to lower the temperature of the surface so seriously as to prove hurtful to vegetation. Our especial object in calling attention to drainage here is to induce caution in the autumn cultivation of farms falling in hand now. The aim is naturally to sow a certain proportion with winter corn, but if the drainage is deficient far better will it be to refrain, and rather to do what is possible in clearing the land now, to ridge it up roughly for winter, to drain as much as possible during winter, and then to sow spring corn with a full dressing of pure home mixed chemical manure next March. Pray do not listen, or rather pay no heed, to prejudicial remarks against the use of such manure. The land is practically exhausted of fertility; the only sure way to impart sufficient fertility to it so as to insure full crops next season is to use full dressings of carefully mixed mineral and nitrogenous manures when the corn is sown. Care must of course be taken to obtain the manure from a reliable source and to avoid all risk of adulteration. Do what you can later on by sheep folding and with farmyard manure, but pray rise to the emergency and let nothing prevent the use of chemical manures, for the first season at any rate. It is precisely because we have so used them that we have been so successful in our treatment of exhausted land. No doubt there is

a certain risk of waste in using such manures upon land newly in hand, but that cannot be avoided; the object is to store it with plant food, and provided each element of fertility is there we do not mind a little in excess. We want a crop, and it must be a full one, and then it will cover expenditure and afford some profit.

Every outgoing tenant farms for a valuation, and therefore he usually has a certain proportion in fallow. If this is a bare fallow and the drainage is sound it is immediately available for Wheat sowing, with a half dressing of chemical manure well harrowed-in before the drill, or better still, if an Excelsior drill is available, drill the manure with the corn. We have every reason to recommend this plan, for the manure is dissolved and taken up by the soil immediately about the seed; the seedlings thus have a full supply of food from the outset, the growth is proportionately robust, and the supplementary spring dressing is far more effective than it ever can be when the seedlings have been in a state of semi-starvation during winter, and a crop that is robust from the beginning comes to maturity much sooner than that which is weakened by poverty of soil.

(To be continued.)

WORK ON THE HOME FARM.

Most pleasant has been the sight of couch fires, muck carts, ploughs, broadshares, cultivators, and harrows all in full activity upon the clay soil of late. Now, if ever, good management tells, and we have not to look far for evidence of it. Take for example a recent visit to two of our farms. At the first we found every corn stack had been thatched, as it was built by that handy man who is so indispensable on every large farm. Stubble clearing was being done, and so too was the carting of manure. The second growth of Clover had been folded by the ewes, and the layer was being ploughed in for Wheat. Part of one large field had of necessity been a bare fallow, the other part had been under Peas, and the whole was being got ready for Wheat. To the bailiff's inquiry if the fallow should be again ploughed with the Wheat land, our answer was, "No, the fallow is clean, time is precious, and besides, you will have the opportunity of trying the merits of stale and fresh furrows, about which there is much diversity of opinion." At the other farm we found several corn stacks still unthatched, carting not begun, no stubbles cleared, and work generally in arrears; yet the bailiff is, in his way, a good man, perfectly honest and trustworthy, but sadly deficient in capacity to organise labour and turn it to best account.

We had much difficulty in getting land ready for winter Beans last autumn. This time we are able to sow in September, before the Wheat sowing. Of the two spring Beans have proved altogether the best crop this year. They were the last crop out on the land, but they are now safely in stack in capital condition. Never did we see finer crops of green Maize. Some of the plants are 10 and 11 feet in height, and the bulk per acre must be far above the average. Rich soil and a hot showery summer ensure a full crop of this valuable forage plant. All live stock eat it greedily, and nothing can be better for cows where the milk is sold. For home-farm dairy cows it has to be used with some caution, as it is apt to impart an unpleasant flavour to the butter. We are glad to find our old favourite the Kerry cow is at length making its way to the front rank of dairy cows. We have long regarded it as no mean rival to the Jerseys, for we have found it yield very rich milk abundantly, and it has the additional merit of being hardy, easily fattened, and fed at a comparatively low cost compared with that of most other cows.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. September.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Id.	
Sunday	15	30.414	55.8	51.4	N.	61.6	62.6	50.2	100.9	45.2	—	
Monday	16	30.412	54.1	49.9	N.	60.0	58.6	47.1	84.4	42.1	—	
Tuesday	17	30.309	52.4	48.2	S.E.	57.2	62.2	36.0	98.0	29.9	—	
Wednesday ..	18	30.228	52.1	48.2	N.E.	53.0	65.0	38.5	98.1	22.3	—	
Thursday	19	29.915	58.1	51.9	S.	55.6	61.9	42.2	70.3	35.8	0.163	
Friday	20	29.690	51.9	47.2	S.W.	55.0	59.9	45.6	103.3	41.1	0.163	
Saturday	21	29.785	49.0	44.3	N.W.	58.9	57.7	4.2	107.3	35.6	0.183	
		50.097	53.4	43.5		57.0	61.1	42.8	95.9	37.4	0.312	

REMARKS.

15th.—Fine morning, but not sunny; fine day and night.
16th.—Fair morning early; dark at 11.30 A.M.; generally dull and overcast, and chilly dull evening.
17th.—Fair bright day and night, but chilly.
18th.—Fine bright morning; cold day, with occasional sun: fine night.
19th.—Dull and overcast generally; cold and rain from 2 P.M. to 7.15 P.M.
20th.—Fine breezy morning, with occasional sun and rain and hail at 3.15 P.M., and then fine with some sun.
21st.—Fair morning, with occasional gleams of sun, sharp rain in the afternoon, and dull damp evening.
The week has been generally cold with rain. The temperature about 13° below that of the preceding week, and 4° below the average.—G. J. SYMONS.



NOTES ON SOILS.

WE are told by vegetable physiologists that primitive soils or pure earths are of no other use or benefit to plants than merely affording them a medium by which they fix themselves in the most favourable position with regard to their future growth. Luckily the horticulturist has little to do with pure earth, it is only when soil is more or less charged with organic matter that it is in any way fit for his purpose, and in proportion to the presence or absence of this matter is the value of the soil to be estimated, superabundance or deficiency to be corrected. Various are the operations for improving soils independent of manures; and it is a more serious consideration to the gardener than to the farmer. For instance vegetables grown in the fields where the land is less glutted with manures are to be preferred to those grown in highly manured gardens. Hence the necessity of improving the soil by other ways than gorging it with more manure than is necessary for bringing to perfection such vegetables as are expected to be produced.

The first method of improving soils is by pulverisation, which operation is performed by trenching, digging, and ridging, the main object being to give scope for the roots of vegetables to strike out in every direction in search of nourishment, and also to promote the free circulation of air and water. Light soils in the course of time, if left undisturbed, become too compact for the free growth of the fibrous roots of plants, as well as for the proper admission of air, and water, and heat; while the strong lands, on the other hand, in a shorter time become impenetrable by the roots of vegetables. No vegetable flourishes without an abundance of roots. Therefore the soil should be adapted as much as possible to the encouragement of these necessary organs, as we are convinced that the quantity of nourishment taken up depends more on the number of absorbing fibres than the quantity of nutritious matter contained in the soil.

Digging between the rows of some plants is a matter of great importance to them, operating on the principle of pruning, cutting, and shortening the extending fibres, causing them to throw out a number of others, the plants being thus enabled to collect a larger quantity of food. It is necessary before planting or sowing that the soil be reduced to a proper consistency, and also to preserve it in that state during the growth of the plants by repeated digging or hoeings between the rows. Capillary attraction, which renders the moisture of the soil more uniform, is also promoted by digging, &c. It is very evident that those soils where the particles are the finest, such as sand, or reduced by repeated diggings or trenchings, are the driest.

Gravels and sands that are naturally reduced to fine portions scarcely retain any water, and often not sufficient for the growth of vegetables, which accounts for their unfruitfulness, while clays, if not acted on artificially, either do not absorb the water, or when they do, retain too much. It is very essential that the soil should be brought into a condition to retain a certain quantity of water and no more, as without this all endeavours to assist by means of manures will be useless.

The depth of pulverisation depends upon the nature of the soil and subsoil. In strong clayey soils it can scarcely be too deep, and even in sandy soils, provided the subsoil does not contain anything hurtful to vegetables, the admission of air is very important.

It is also necessary that all soils should be kept open as much as

possible for the admission of a sufficient quantity of heat to the roots of plants. Earths are bad conductors, and it would take a long time before the heat could penetrate to a certain depth, especially in spring, to be of any importance to roots of vegetables, unless by frequent turnings the soil is capable of admitting a free entrance of the sun's rays as well as tepid rains. It is also necessary that soils should be open for effecting those changes all manures have to undergo before they can be fit food for vegetables. Animal and vegetable substances undergo decomposition when exposed to the action of air, light, and water. Improving soils by pulverisation is very important; but still we must not think that is all, for in the strictest sense of the word it only benefits the plants by increasing their fibrous roots. Garden ground should never lie uncultivated for any length of time unless sown with grass. The aëration of lands in winter is also very important, and the water in the soil freezes, causing it to crumble down into a fine mould. Insects and their eggs, with the roots of weeds, are also destroyed in larger quantities than may be supposed.

The tenacity of clayey soils may be corrected by sand, lime, chalk, or coal ashes. Such soils cannot be too much worked; every opportunity should be taken to rough dig and ridge them, taking care such operations are not done when the soil has been saturated with wet. Soils which contain a large quantity of gravel are not quickly or readily enriched by manures, the finer portions being washed out by rain, and not being capable of retaining a sufficient quantity of moisture suffer greatly from drought in summer; but if they are cleared of a portion of the small stones and some strong loam added to form a body, they will be found capable of keeping enough moisture for the growth of future crops. Light soils, however, have their advantages, for from these we obtain our early spring crops, as they are much more capable of resisting frosts than strong soils. Being warmer they afford less moisture, and the crops do not grow so luxuriantly, and are therefore much earlier; but when summer comes they are either unproductive, of short duration, or fail altogether.

The *beau idéal* of a fertile soil, it is remarked by the late Mr. G. W. Johnson in "Chemistry of the World," is one which contains such a proportion of decomposing matter as to keep the crop growing there always supplied with it in a fit state for absorption, yet not so superabundantly as to render it too luxuriant, if the object in view be the production of seed; but for the production of those plants of which the foliage is the part in request, such as Spinach, or of edible bulbous roots, such as Onions, which have a small expanse of leaves, so as to be almost entirely dependent upon the soil for nourishment, there can scarcely be an excess of decomposed matter presented to their roots. Asparagus especially demands abundant nourishment, as, similar to the Onion, it has little foliage and fibrous roots.

But it is evident that to insure these desiderata in any soil and at all seasons is impossible, as a soil that would do in one climate would fail in another if the mean annual temperatures should differ, as well as the amount of rainfall during the same period. In the west of England we have twice as much rain as in the eastern counties, hence a soil in the east may be more tenacious and richer than the one required for the same crop in the west.

Respecting affording warmth to plants Mr. Johnson says, "The earth is of considerable importance, and the power of accumulating and retaining it varies as much in soils as the proportion of their constituents." Sir H. Davy found that a rich black mould, containing one-fourth of vegetable matter, increased its temperature in an hour from 65° to 88° by exposure to the sunshine, while a chalk soil registered only 69° under similar circumstances, but the first when removed into the shade cooled in half an hour 15°, whilst the latter only lost 4°. This explanation will show why crops on light-coloured tenacious soils are in general so backward in spring, but retain their verdure longer in autumn than those on black light soils; the latter acquire warmth more readily, and part with it with

equal speed. It may be noticed that where coal ashes are sprinkled over beds of Beans, Peas, &c., they are generally a few days earlier, as it is a well-known fact that dark-coloured bodies absorb heat more readily than those of a lighter hue.—A. G. FRAMPTON.

TUBEROSES.

WHERE buttonholes, sprays, wreaths, or bouquets are in demand few flowers are more useful than those of the single and double Tuberose. The bulbs can generally be obtained by the last week in September or early in October, and when the flowers are required early the bulbs should be potted at once and pushed forward. For succession and late flowering they can be potted at intervals of a month until the beginning of May.

An impression prevails that bottom heat is necessary for the successful culture of Tuberoses. This is erroneous, and may be the means of preventing many growing them who might readily do so in an ordinary greenhouse. Bottom heat is unquestionably a great aid where the flowers are needed early in the season, but for successional plants it need not be applied, the only difference observable is the greater length of time required before the flower spikes are visible.

The bulbs may be potted singly in 4½-inch pots, or three may be placed into 6-inch pots. Good drainage is essential, and the compost must be pressed in moderately firm. They succeed admirably in two parts good loam, the other two parts being composed of leaf soil, sand, and decayed manure. Not more than one-sixth or seventh of the latter should be used, the sand being proportioned according to the texture of the loam. During the past year our plants have been grown in soil that had produced a crop of Cucumbers with the addition of sand and one-third leaf mould. When potting is completed the bulbs must be about three-quarters of an inch above the soil, leaving plenty of room for water. There are usually a number of eyes that produce suckers and give endless trouble after they start into growth. They are quickly removed with the point of a knife, and the time required before potting is labour well spent. When they are allowed to grow they rob the plant of support that would otherwise be concentrated in the production of the stem and flowers. It is important that the soil be in an intermediate state of moisture, as the application of water is injurious before root growth has commenced.

If the pots can be plunged where the bottom heat ranges 65° to 70°, and the temperature of the structure is 60°, the plants will quickly commence rooting and growing. We prefer to cover the surface of the soil and rim of the pot with the plunging material to arrest evaporation and obviate the necessity for watering. Where bottom heat cannot be given stand them on the surface of a bed, in the temperature named, and fill the space between the pots with cocoa-nut fibre refuse, covering the surface as advised for those plunged. Bulbs started during November, December, and January may be subjected to the same treatment. Those started afterwards will do very well in warm vineries or Peach houses. It is not wise to start them in greenhouses before the beginning of March, and in all cases plunge or cover the pots to prevent the soil drying. Even in May, however, we prefer to start them in any structure where a little heat is maintained, and then remove them to cold frames or a cool house. When they are growing and rooting freely they will bear without injury the cool airy treatment of the greenhouse or cold frames where the lights can be thrown off during fine warm days. Those required for flowering during the two last months of the year may be plunged outside in a sunny position, where they can remain until the middle of September. Amateurs who have only a greenhouse would do well to pot only two supplies of bulbs—namely, on the 1st of March and on the 1st of the following month.

The bulbs potted at the present time should have the plunging material removed from the surface of the soil as soon as active growth has commenced, and supply the plants with tepid water as they need it. They can have the advantage of bottom heat until the flower spike is visible, when they may be lifted out and stood upon the surface. After they reach this stage bottom heat affords no help, for the spikes are quickly developed and commence unfolding their flowers. Arrange them as near the glass as possible to keep the foliage dwarf and sturdy. If the flowers are only needed for cutting the plants can be packed closely together without the slightest injury. Those housed about the middle of September may be placed where they will enjoy a temperature that does not fall below 50°. In this position the flower spikes will quickly appear, and the plants may be introduced into a higher temperature as required. After October they should not be in a lower temperature than 55°, which may be increased 5° to 10° by the time they commence opening their flowers. To show how accommodating

the Tuberose plant is, it may be stated that late bulbs have been stood in vineries where the roof is covered with foliage, the house has been closed only when there has been a prospect of frost, and the plants have commenced producing their spikes freely. We have kept them in this position for at least a month without the slightest sign of injury. Plants started late and grown on under glass in a sunny position frequently produce the majority of their flowers early in September. During the season of growth abundance of water at the roots is needed, in fact the soil must never be allowed to become dry. Weak stimulants, whether the plants are early or late, are very beneficial.

Only the other day we were told that the bulbs after flowering could be dried and utilised another year. Such, however, is not the case. When strong bulbs have flowered they are useless for another season. But those which fail to flower and make a good growth may be ripened, and they will flower equally as well as imported bulbs. The old plants are certainly prolific in the production of young bulbs, but so far we have failed to see that their retention for future use is advisable, especially as they can be annually purchased at very low rates. Probably also from the freedom by which they can be increased they will be cheaper in the future than they have been in the past. The variety known as Pearl is decidedly the best, but other varieties as well as the single form are by no means to be despised. The Pearl is not so tall as any other variety known to me.—NORTHERNER.

LIQUID MANURE FOR FRUIT TREES.

I HAVE rarely read an article treating of fruit trees which, especially as to those of full growth, contained such valuable advice in so few words as that of Mr. Wright in your last number. It ought not to be cursorily read and then forgotten, as is the fate of most advice of the kind, but remembered and carried into practice. Everyone whose trees are barely remunerative, especially in those districts which, less favoured than the counties of Hereford, Worcester, Gloucester, Somerset, Devon, and Kent, are not naturally well suited for growing fruit. Two conditions are eminently necessary to the perfect development of a tree: sufficient food in the soil in which it is growing, and sufficient moisture to enable the roots to avail themselves of that food.

I have reason to believe that many fruit trees have not yet perfectly recovered from the extraordinary drought of 1887-8, which had probably quite as much share as the cold and wet summer of last year in preventing the proper development and ripening of the fruit buds, which ought to have given us fruit this year. Much of the success of a fruit crop, especially of Apples and Pears, depends on the perfect growth in the preceding year of the first foliage of the tree. This did not take place in 1888, as the drought commencing in 1887 continued until June, 1888, and the soil about the roots being dust dry for many feet down full development of the leaves was impossible. The blossom buds this year were quite as numerous as usual, but very small; many of them before they swelled could scarcely be distinguished from wood buds. The blossoms were imperfect, and, notwithstanding an exceptionally favourable season free from frost, did not become fertilised and set their fruit.

The application of liquid manure in the winter of 1887 would probably have remedied much of this mischief, and the plague of caterpillars, having larger and more fleshy leaves to feed on, would have left uninjured a larger proportion of them, and the maturation of its fruit buds and the further development of the tree would have been less injuriously affected. Even in an average season the leaves of a tree prevent the greater part of the summer showers from penetrating the ground occupied by its roots; consequently it does not get as much moisture as it could use beneficially, its fruit does not swell or its growth mature so perfectly as when its full requirements are satisfied.

Fruit, especially of Apples and Pears, in the less favoured districts of the country, is comparatively small and stunted. This is obvious to anyone who at exhibitions compares the produce of the more and less favoured districts; and even as to the former, if the Apples, for example, of Mr. Bunyard, grown in his Kentish orchard, be compared with those cultivated in his orchard houses, the beauty and size of the house-grown fruit are so far superior as to give the impression that they are varieties different from the same kinds grown in the open. These various degrees in quality prove conclusively that our fruit generally is capable of great improvement, and it must be worth while to make an attempt in that direction when some of the means are so easy.

The majority of growers unfortunately are not cultivators. If they plant a fruit tree, and in fact any other tree, they leave it to take care of itself for ever after, doing nothing except sometimes in gardens where the limited space compels some pruning to keep

the trees within bounds; but some are guilty of worse than neglect, as they do not allow to a tree sufficient room to grow without disturbance. They know that a Cabbage requires a certain space for its proper growth, and do not dig or plant within that space; but they do not apply this knowledge to a fruit tree, but dig and crop up to its trunk, more especially on the borders of wall fruit trees, as they rely on these borders for their best and earliest vegetables.

The case of wall trees and espaliers is worse even than that of standards, as the extension of the boughs of the latter generally insures to them some limited space in which the surface roots are undisturbed. Nothing will compensate for destruction of surface roots, but the double-cropping of the ground renders it doubly necessary to supply by some means the deficiency of moisture and food caused thereby. Probably there is no plan more effective than that recommended by Mr. Wright; it will minimise the injury of double-cropping, and with reference to the trees which are allowed to grow naturally without interference with their surface roots, it will supply them with means of developing more perfectly both their growth and their fruit.

The food for fruit trees in any soil has its limit, which is sooner reached in the less favoured districts; but before that limit is reached there is a period during which the soil contains less than is required for healthy growth, when the trees gradually become diseased and the fruit scrubby; for this condition an artificial supply of food is the only remedy. Liquid manure combines both food and moisture, and its application in winter is more practical and effective. Practical because the ordinary work of the season does not interfere with the application being made thoroughly; and effective, because it lays up in the ground a store of food on which the tree may draw for its first and most important growth.—EDMUND TONKS.

P.S.—As the following extract from a most instructive report on "Fifty Years of Fruit Growth," by Charles Whitehead, in the forty-ninth number of the "Journal of the Royal Agricultural Society," read by me after I had written the above, bears on the subject, I venture to quote it. "In the description of fruit production in Kent it was remarked that growers had discovered that Cherry orchards require manure from time to time and were now in the habit of supplying this. This applies to other fruit orchards and to other fruit plantations to which manure is now in many instances most liberally applied. There are still growers in the cider-making counties who do not believe that the Apple and Pear trees require any assistance whatever. Generally speaking there has been a wonderful advance in this direction, which should be especially noted as constituting an element, and by no means an unimportant element, in the progress of fruit farming. It has been found that the progress of canker is stayed by plentiful manurings, and other disorders to which fruit trees are liable are checked by liberal treatment."

DESFONTAINEA SPINOSA.

IT is much to be regretted that in a great many public ornamental grounds care has not been taken to introduce our choice shrubs in larger numbers. Cemeteries give scope for a greater variety of shrubs than are often found there, and it has frequently occurred to me that no better place could be chosen for them, for many of the visitors need something that will interest and not offend them, and a more fitting object could not be found than a shrub with which the visitor is perhaps not acquainted. Laurels, Laurustinus, Lilacs, and the like, good and indispensable as they are, need not be the only shrubs planted, there being many others known and cultivated long ago that are far from being common even now. It is but seldom that the Phillyreas are met with, and no finer shrubs are grown than some of them; they always look well, and sometimes, when loaded with berries, are quite handsome. The glossy-leaved Alaternus is equally ornamental.

Desfontainea spinosa is a shrub in many respects resembling the Holly, only instead of being ornamented with berries, red or yellow in winter, it presents us in summer with an abundance of handsome orange-coloured flowers, resembling those of *Lapageria rosea*. The plant, I believe, is perfectly hardy, but ought to be classed amongst those flourishing in peat soil, more so, I think, than the *Magnolia* and some other plants. It is, nevertheless, more accommodating than some of them, and is well adapted for a low wall; but here a plant on the open lawn flowered most profusely during the past summer, no doubt stimulated to this by the weather of the previous year. With us the plant is not fast-growing, but this I attribute to the lack of peaty matter in the soil, as I have seen it elsewhere grow more freely. To those who have not seen its fine, orange-coloured, tubular flowers, and who have a favourable position for a plant of moderate growth, I would say, Obtain one of this, and the first appearance of its blossoms will be an ample reward for any trouble that may be taken.

I believe it likes a dry situation, but I am not sure of this; still, as for plants of doubtful hardiness such a position is the safest, we must take it for granted as being the best for the *Desfontainea*, until perhaps

someone finds out that one quite the contrary is better. Those places where I have seen it succeed were dry and sheltered from the coldest winds.—J. R.

THE FRUITERERS' COMPANY AT THE MANSION HOUSE.

ON Wednesday evening, September 25th, at the Mansion House, the Lord Mayor entertained the Master and members of the Fruiterers' Company, and also the members of the General Purposes Committee of the City Corporation. Before the dinner the usual presentation of fruit was made to the Lord Mayor. The fruit, the very finest specimens of English produce, chiefly comprised Pine Apples, black and white Grapes, Apples, Pears, Peaches, and Nectarines, and was artistically arranged on tables in one of the small drawing rooms.

Mr. R. S. Mason, Master of the Fruiterers' Company, addressing the Lord Mayor in the presence of the guests who arrived early, said that, in accordance with the ancient custom, the Company had the honour to present to the Lord Mayor the annual specimens of fruit. This year, in accordance with the wish of the Lord Mayor, the specimens were entirely of English growth. The Company desired through him to express the appreciation they felt of the interest the Lord Mayor took in promoting the better cultivation of choice and hardy fruit. Referring to the part the Lord Mayor had recently taken in successfully settling a labour question, he said that if the cultivation of fruit and vegetables were carried on in this country to the extent that it might be, the congestion of the labour market in the great towns would be very considerably reduced.

The Lord Mayor, in acknowledging the presentation, said he had made it known that he should prefer the gift to consist entirely of British grown fruit, because he felt there was a great necessity at the present time to offer incentives and give encouragement to the growth of fruit in this country; and he believed that if due attention were given to fruit cultivation British fruit would be as good as, if not better than, that imported from abroad. He had, as the Master had stated, in recent years taken considerable interest in the subject of fruit growing; he had done his best to persuade his fellow countrymen that it was necessary and desirable, and would be very advantageous to the community, that the cultivation of fruit in this country should be regularly and systematically extended. In the course of recent researches he had met with a successful example of fruit cultivation on a small farm not far from a large town. The area of the farm was 12 acres; and the farmer gave him figures which showed that—excluding the growth of fruit under glass—the net profit, after paying rent and other outgoings, was £137 10s. in 1887, and in the following year, when exceptional causes were in operation, it fell to £121 10s. He had no doubt that others could, by perseverance, attain equally satisfactory results. He congratulated the Company on the magnificent fruit which they were able to present under the limitation that none of foreign growth should be included.

Having accepted the fruit, H. R. Williams, Esq., Past Master of the Fruiterers' Company, then introduced Mr. J. Wright to his Lordship, at the same time explaining the object they had in view in offering a prize for an essay on fruit, to which Dr. Hogg kindly added a gold medal as an incentive to competitors. Sixty persons, he said, applied for the particulars of the competition, but only fourteen sent in essays, the number, he suspected, being limited because of the stipulation that each competitor was required to make a declaration to the effect that he had at least ten years' actual experience in the cultivation of fruit, and to indicate where the experience was obtained. Mr. Williams observed that this stipulation would naturally restrict the number of essays, but correspondingly increase their value. Most of them, he had been informed, were of great merit, but the prize was unanimously accorded to the one sent in by Mr. J. Wright. This he had seen, and was highly satisfied with it, and believed it would be largely circulated and do much good. He expressed his pleasure in finding that the successful competitor was on the staff of Dr. Hogg's Horticultural Journals. This, he thought, must be gratifying to Dr. Hogg, and would inspire public confidence in those Journals and the advice and instruction they contained. Mr. Williams further added that Dr. Hogg knew nothing whatever about Mr. Wright's action in this matter. He was not apprised of the existence of the essay till it was completed and sent in. He had never seen it, and only learned the decision of the Judges by announcement in the usual way. He then produced the prizes for formal presentation.

The Lord Mayor immediately handed them to Mr. Wright, with, as he said, very great pleasure indeed. He had had the opportunity of glancing through the essay, though he had not had time for reading it carefully and critically. He was satisfied, however, it was a valuable contribution on the important subject of fruit production, and asked of the author the acceptance of his sincere congratulations. He (the Lord Mayor) as was known, took great interest in the home culture of fruit, and strongly desired to see its development; and he felt sure that the action of the Fruiterers' Company would contribute powerfully to that object, that the essay, he believed, pointed the way clearly, and he therefore held out the right hand of fellowship to Mr. Wright, whom he trusted would see good results from the work he appeared to have done so well.

The medal has a handsome ornamental border of Apples, Pears, Grapes, and various other fruits entwined, while the centre bears the words:—"Presented by Robert Hogg I.L.D., F.L.S." On the reverse

side is the following inscription:—"To Mr. John Wright, the successful competitor for the prize of 25 guineas offered by H. R. Williams Esq., P.M., through the Worshipful Company of Fruiterers, for an essay on Profitable Fruit Growing for Cottagers, 1889."

Mr. Wright, in acknowledging the honour conferred, said that it was greatly enhanced in value in having been received at the hands of the chief magistrate of the city of London, whom he thanked for his kind words and for his services in the cause of fruit culture in this country. Mr. Wright hoped the essay contained plain teaching that might be understood by the inexperienced who needed instruction. It was founded entirely on practice, and methods of procedure were made as clear as he could make them with pen and pencil. He had long felt humiliated when he visited, not large cities alone, but particularly the markets of small towns in agricultural districts, and found barrels of foreign Apples everywhere, while the surrounding land would grow even better samples, if the varieties were wisely chosen and well grown. He was glad to see the revival in fruit farming, but particularly desired to see, as he believed the Lord Mayor and company assembled desired to see, the greatest possible number of the industrial population who had gardens attached to their cottages, or suitable plots of land, devote a portion of them to the cultivation of fruit for their families, disposing of the surplus in adjacent towns. He believed in this way the condition of many of the toiling masses might be improved, and the greater the contentment in the homes of the multitude the greater would be their loyalty to the throne and constitution.

The room was crowded, and among the horticulturists present were Dr. Hogg, Rev. W. Wilks, and Messrs. T. Francis Rivers, A. F. Barron, Shirley Hibberd (the three last named being the adjudicators in the competition), R. D. Blackmore, Harrison Weir, and G. Bunyard. Those gentlemen, with the Very Reverend Dean Hole, Mr. Thiselton Dyer, Mr. Wright, and nearly three hundred others, subsequently dined with the Lord Mayor and Fruiterers' Company in the Egyptian Hall.

At the Banquet numerous toasts were proposed and honoured, and the Lord Mayor, in proposing the "Fruiterers' Company," said he had made the gathering at the annual presentation of fruit larger than usual because the Company had recently shown great interest in fruit culture. He believed their chief aim was to bring about the re-creation of homestead and cottage orchards. In all our counties, with perhaps three exceptions, there were in years gone by orchards which produced good and marketable fruit; and these orchards were now worn out, or were decaying and not being renewed. This was a disgrace to our country, which was as capable of growing fruit as America or Australia. There must be something wrong to account for this condition of things. Some evils were of a more or less controversial character, and that was not the place to discuss them; it was not sufficient for him to acknowledge the admirable action of the Fruiterers' Company in doing their utmost to promote the growth of hardy fruit in this country. The success of those efforts would improve the condition of the agricultural population, would keep population in this country, would relieve the glut of the labour market in towns, and so would benefit the whole country. The Company was therefore entitled to gratitude for the efforts they were making to extend fruit cultivation. The present Master of the Company had shown greater aptitude in this work than any of his predecessors; he was seeking to raise a sum of £5000 to carry on the work, and the Company was determined to go on increasing its usefulness from year to year for the benefit of the country at large.

Mr. Mason, in responding, said it was quite true that within the last year or two the Company had made great efforts to spread amongst their countrymen some knowledge of fruit farming; but he found it almost impossible to speak upon a subject which was difficult, endless, and controversial. He was constantly appealed to by would-be fruit growers for information upon a great variety of questions, and he could only refer them to the records of the conferences that had been held, and practical papers in the class journals. The appeal of the Company was to be brought before the Corporation, who no doubt would respond liberally; and Mr. Chaplin, he hoped, would be able to do something for them in his new office. They were under obligations to the Lord Mayor for the interest he had taken in their movement.

ANNUALS FOR MIXED BORDERS.

THESE make a display through the summer months with very little trouble, and deserve to be grown much more extensively than they are at present; some of them being seldom seen, causing numerous inquiries how they can be obtained from ladies who see them growing. In many instances they have acquired an uneventful reputation where they have been grown, either because seed was not sown early enough or the ground was too poor for them, but with a little care they assist considerably in adding interest and beauty to the mixed border and similar positions, and as a rule continue in flower much longer than the ordinary occupants. In order that some of them may reach their full development next summer they should be sown at once in a warm and sheltered position in rows about 1 foot apart and covered very slightly, to remain in this position during the winter and be planted in their permanent positions at the end of March or early in April, according to the season. The following are quite hardy here:—*Nemophila insignis*, *Leptosiphon hybridus*, *Centaurea cyanus minor*, *Eschscholtzia erocea*, *E. Mandarin* and *E. grandiflora rosea*, *Clarkia integripetala* and *C. pulchella marginata*, *Matricaria inodora flore-pleno*, *Xeranthemum annuum flore-pleno*, Sweet Peas, *Papaver umbrosum*, *Erysimum Perofskianum*, &c.

Several others are hardy farther south, but will not survive an

ordinary winter here, and we therefore sow them early in spring—about the last week in March or as soon after as the weather permits, except a few of the tenderest of them, which are marked with an asterisk, and should be sown a fortnight later than the others. *Malope grandiflora*, *Linum grandiflorum*, **Phacelia campanularia*, *Cacalia coccinea*, **Cosmos bipinnatus*, *Nigella damascena*, **Eutoca viscida*, *Convolvulus triolor* (mixed), *Chrysanthemum segetum*, **Ipomæa purpurea* (mixed), **Anagallis* (mixed), **Brachycome iberidifolia*, **Dianthus Hedderigi* and **D. laciniatus*, *Godetias* in variety, *Schizopetalon Walkeri*, *Whitlavia grandiflora*, Sweet Sultan, yellow, red, and white, *Bartonia aurea*, and many others. These should be sown in clumps where they are to flower, thinning them out to about six plants as soon as they are ready. In most instances no further attention will be required beyond keeping them clear of weeds.—W. H. DIVERS, *Ketton Hall, Stumford*.



LÆLIA PUMILA.

THIS is a beautiful, but at the same time, a very variable species; the white marginal border to the lip, however, is always present, let the variations be ever so great in other respects. It thrives best when placed upon a block of wood and treated like *L. præstans*. The rhizome is creeping, not much stouter than a goose-quill. Pseudo-bulbs are approximate, oblong, 3 to 4 inches high, slightly furrowed; leaves solitary, oblong, lanceolate, acute, coriaceous, and bright green; scape one to two flowered; flowers large and spreading, upwards of 4 inches in diameter; sepals oblong-acute, the dorsal sepal recurved; petals more than twice the width of the sepals, and like them of a deep purplish lilac, in some varieties approaching rosy crimson; lip three lobed; lateral lobes large, incurved, enclosing the column, white, blotched with purplish crimson near the edges; mid-lobe roundish, flat, deeply emarginate, deep crimson with a distinct marginal border of pure white. It blooms during September and October, and is a native of Brazil. 1843.

LÆLIA CINNABARINA.

A dwarf compact growing plant, producing flowers of great beauty, the fact of their peculiar colour being very rare amongst orchidaceous plants rendering them all the more valuable; Pseudo-bulbs pyriform or flask shaped, tapering towards the point into a slender neck-like stem 4 to 5 inches long, dark green tinged with reddish brown; leaves solitary (more rarely in pairs), oblong, acute, erect, very thick and leathery, 5 to 6 inches long, deep green; scape much longer than the leaves, many flowered; sepals and petals equal, linear lanceolate, deep reddish orange; lip three-lobed, the mid-lobe spreading, lateral ones enclosing the column, the same colour as the perianth. It blooms during the spring months.

LÆLIA FLAMMEA.

Another of the Messrs. Veitch's hybrids, and in this case we are again indebted to Mr. Seden. "Imagine a flower of *Lælia cinnabarina* increased three times, with its brightest vermilion; give it a splendid yellow lip, with an amethyst-purplish wavy anterior lacinia, and a small white column washed under the stigma with purple; thus you have the first rank beauty, raised by Mr. Seden at the Royal Exotic Nursery of Messrs. Veitch." Such is Prof. Reichenbach's description of this beautiful hybrid Orchid, which, on account of its uncommon and effective colouring, is one of the most welcome. It was raised between *Lælia cinnabarina* and *Lælia Pilcheri*, itself a cross-bred plant between *L. crispa* and *L. Perrini*. It was described by Mr. T. Moore as follows:—"The plant is of moderate stature, and has slender cylindrical stems, each terminating in a solitary ligulate, oblong, fleshy leaf. The peduncles are terminal, somewhat elongated, and bear one to two flowers, possibly more; the individual flowers are some 4 inches across, with ligulate acute sepals and petals, of a brilliant cinnabar-orange colour, while the lip, which is oblong and trifid in front, has the yellow side lobes folded over the columns, and the intermediate one rounded, denticulate, somewhat crisped, and of a rich crimson hue, passing into crimson veins on the disc." It blooms during the spring months.—G. T.

SHADING ORCHIDS.

WHERE shading has been practised as little as possible during the past month the blinds may be removed and stored during the winter. If no attempt has been made to prepare the plants for full exposure the change will be too sudden, and it will be better to continue the use of the blinds for a few weeks longer, employing

them as little as possible before removing them altogether. It will still be necessary to shade *Phalænopses* from bright sunshine for some time yet, and the blinds may be drawn down on the south side of the *Odontoglossum* house for a few hours when the sun is hot. If the structure in which they are grown runs north and south it will be necessary to use the blinds on the west side only. Full exposure from the present time will do the plants no harm, and the use of the blinds for a few hours is only advised on the ground that it prevents the temperature rising too high and the atmosphere of the house drying quickly through a high temperature and abundance of air. Overshading cannot be too strongly condemned, it results in long soft foliage that will scarcely support itself. Good flowers and stout spikes cannot be expected from plants in this condition. The finest flowers, with good substance and highly coloured, may be looked for from plants that have sturdy well ripened pseudo-bulbs and foliage that turns nearly red by gradual and careful exposure to light.

WINTER BLINDS.

These are of the utmost value for covering Orchid houses during the winter. They protect plants that may be arranged in baskets or on blocks close to the glass, and assist wonderfully in maintaining a uniform temperature about the plants. The hot dry heat that has to be maintained during very windy weather proves injurious to these plants, but is largely overcome by the use of strong canvas blinds for covering the roof. However well houses may be glazed or supplied with pipes, it is difficult in windy weather to maintain the requisite temperature without overheating, and any system that will obviate this is worthy of consideration.

CATTLEYA TRIANÆ.

In many gardens these cannot always be given the exact temperature in the various stages of growth that will suit them best. It often happens that they have to be grown slightly warmer than is good for them in order to suit other plants. Those that have made their growth and produced their flower sheaths are very liable to start again into growth. This must be prevented, for growths that are made during the dull sunless days of winter are only puny in comparison with what they should be, and the next season's growth is often considerably weaker than it would have been had winter growth been prevented. Where plants may have started into growth nothing is to be gained by starving them; on the contrary, the growths started may damp and the plants next spring will be compelled to force dormant eyes into growth, which rarely make growths as strong as those from the leading pseudo-bulbs. The best course with those that have started is to move them to the warmest structure, say the East Indian house, and thus assist them to make and complete their growth as early as possible. To prevent growth no harm is done to the plants by removing them to a cooler and more airy structure, fully exposing them to the sun. The temperature should not fall below 50°, and the plants must be carefully watered at their roots but not allowed to suffer by keeping them too dry.

MILTONIA CANDIDA.

This is a strong growing Orchid, and flowers with great freedom when grown at the coolest end of the *Cattleya* house and exposed to plenty of light during the latter stages of growth. It does well in a pot with fibry peat and a good layer of sphagnum moss on the surface. It flowers so freely that pseudo-bulbs of moderate strength only will produce two spikes, and often three and four. It is useful, flowering as it does during September. The supply of flowers may be prolonged considerably where a number are grown by pushing some forward at the warmest end of the house, and retarding others by growing them at the coolest. The form of this Orchid known as *grandiflora* is unquestionably the finer of the two, being of stronger growth with larger and brighter coloured flowers, but it is a rare plant in comparison with the other. It flowers at the same time, and grows luxuriantly with the same treatment.

MAXILLARIA PICTA.

Where sweet Orchids are appreciated this is well worth growing. For some years we have had some in 5-inch to 7-inch pots for placing, when in flower, in vases in dwelling rooms, and the flowers for cutting for filling small glasses. The plants bear confinement in rooms without the slightest injury. Our plants make their growth in the *Cattleya* house, and are then placed at the coolest end of the *Odontoglossum* house and fully exposed to the sun. From this structure they are removed to heat as required. It is a free growing Orchid and increases rapidly. It grows well in peat, and only needs a complete rest after the completion of growth. The plants are also allowed to rest again after flowering. Their removal from a warm house to a cool one after flowering appears to do them no harm.—ORCHID GROWER.

THE ORANGE-COLOURED SATYREUM.

TERRESTRIAL Orchids have with a few exceptions been somewhat neglected by cultivators, and it is satisfactory that some species are being again brought into notice. Upon several occasions during the past season plants or flower spikes have been exhibited at the Westminster meetings, and one for which a certificate was

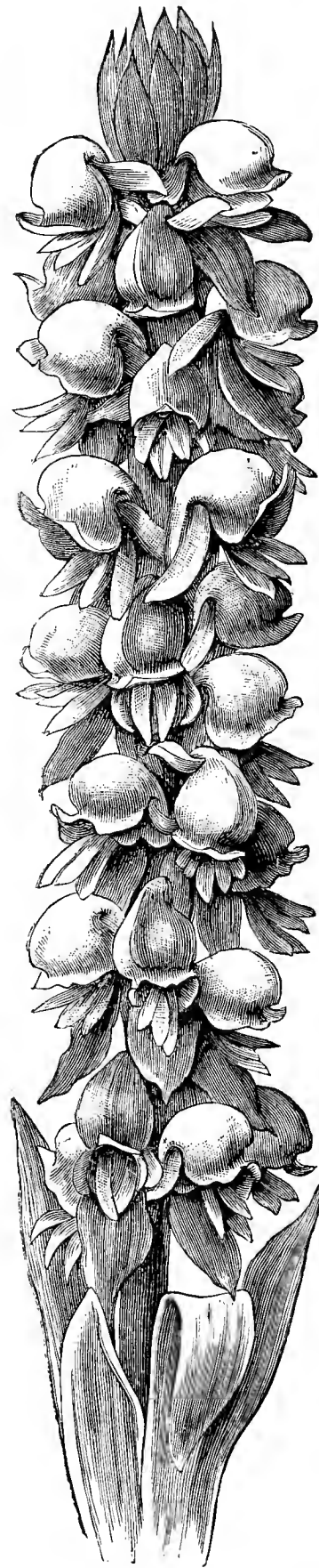


FIG. 36.—SATYREUM AURANTIACUM.

granted—namely, *S. carneum*, has already been figured in this Journal. Another shown by Mr. T. S. Ware under the name of *S. aurantiacum* is now represented in fig. 36, and though somewhat smaller and less imposing than the one previously noted, it is decidedly attractive. The leaves are broad, the flower spike

compact and long, the flowers being of a rich orange colour. It succeeds with the same treatment as the other species from the Cape of Good Hope.

THE CHISWICK VEGETABLE CONFERENCE.

LAST week we gave a summary of the Exhibition, and referred to the papers announced in the programme to be read on Wednesday and Thursday, September 25th and 26th. We are now able to publish abstracts of some of the principal contributions, with a list of the awards made by the Committees of Selection.

The proceedings commenced on Wednesday, at 2 P.M., by an opening speech from the President, Sir Trevor Lawrence, Bart., M.P., who complimented the exhibitors on providing such a representative display of horticultural produce, and on behalf of the Society he extended a hearty welcome to the horticulturists present. He considered it was most desirable, in the interest of the community, that more vegetables should be eaten, for although he was not a vegetarian, he was assured that if more good vegetables and less beef and mutton were consumed, a great improvement would be effected in the health of the people. He also suggested that attention be paid to the preservation of vegetables in this country. It is at present neglected in England, and if he wanted preserved vegetables he had to obtain supplies from abroad. He hoped that much would be done to bring into greater prominence the best varieties in the several sections, and also that attention might be directed to several really good vegetables but little grown. He mentioned the Turnip-rooted Celery and Cardoons as worthy of more general attention. With regard to improvement in the cooking of vegetables, he appealed to the ladies present to do all in their power to effect a much-needed reform.

Mr. H. J. Veitch followed with an address on the improvement amongst vegetables during recent years, in which he remarked that though vegetables are not so important for exhibition as ornamental plants, flowers, and fruits, they are full of interest to the gardener, for to their production he had necessarily to devote a large share of his attention. He said Cabbages were generally grown throughout Western Europe 2000 years ago, and that the evolution of the numerous and widely diverse members of the Brassica family from the wild form represented a very long period. The Potato, introduced about 200 years ago, had undergone a great improvement, and it was probable that still further improvement might be effected by intercrossing. Of late years a considerable change had been made in Potato culture, and now the importance of a change of seed and a thorough tillage of the soil are fully recognised, with the result that the losses from disease had been much reduced. Of Peas in the lists twenty-five years ago about 100 have disappeared, the most important of the old varieties remaining being *Ne Plus Ultra*, Veitch's Perfection, *Champion of England*, and *British Queen*. The sorts which had disappeared were replaced by improved varieties, of which forty-two had after trial been certificated by the Royal Horticultural Society. These are undoubtedly superior to the older sorts. Beans also had materially improved, and he mentioned several as valuable additions. Several Butter Beans have been introduced, and he considered they deserved to be more generally grown, for when served in accordance with the practice which obtains on the Continent they are delicious. Carrots, Turnips, and Radishes were noted, and Mr. Veitch observed that the cultivation of Mushrooms had been so greatly increased during the past thirty years that to every pound then grown at least one ton is now produced. If there had been activity in the introduction of new sorts, the manufacture of new names had not been neglected, and the Royal Horticultural Society have been fully justified in making their comparative trials for the purpose of bringing more prominent into notice the finest kinds, and reducing the names both in gardens and catalogues. He hoped that gardeners would in all cases support the authority of the Society by adopting its recommendations in the matter of nomenclature.

The next paper was by Mr. Hibberd, and was followed by an interesting discussion in which Sir Trevor Lawrence, Mr. H. J. Veitch, and Mr. H. de Vilmorin joined.

CULTIVATION OF ASPARAGUS.

[Abstract of a paper read by Mr. Shirley Hibberd.]

IN a brief essay on this subject Mr. Hibberd said he had no intention of touching those points in the cultivation of Asparagus that were generally understood, but some exceptional matters, the consideration of which his own circumstances had forced upon him. The actual necessities of his domestic life during a series of years included a continuous supply of Asparagus for the table. To be without this vegetable for two or three months together had been to him so serious a matter that he was bound to adopt measures to bridge over the hiatus; moreover, he had been compelled to produce a continuous supply on a heavy clay soil altogether unfit for the purpose. He had been enabled to secure any necessary amount of rubbish from the demolition of buildings, the usual cost of this material being 1s. per cubic yard, with a trifling gratuity to the carters. When roughly turned over in the yard there was obtained a great bulk of broken lime and plaster, and this being mixed with decayed vegetable rubbish and the top spit of turf from the clay pasture to be operated on formed the material for the Asparagus beds. The beds were formed by simply depositing the mixture on the surface, and thereby forming banks 2 or more feet deep and 6 feet wide, and the

rule had been observed of growing on these rough beds a quick green crop of Potatoes the first season. The preparatory crop being removed, and the beds dug over and liberally manured, they were sown with Asparagus in rows 2 feet apart, after which the beds were cut down to a reasonable width for two rows of plants, and these as they advanced were thinned in the rows to 2 feet apart. In hot dry summer weather irrigation was practised, and great care was taken to keep down weeds and to ensure that only one stool should be formed at each station at 2 feet distance every way. The growth of the plant was vigorous; in due time the supplies were liberal; and usually a fair supply of table grass was obtained agreeably to the primary requirement of a continuous supply.

Certain rules observed in this culture were set forth, comprising first a conservative system of cutting; the removal of sprue not being allowed, and only so much of the "fat grass" being taken as was actually wanted. This treatment favours the accumulation of vigour in the plant, which is favourable to continuity of supply and the production of a fine sample. Another point of importance is to afford shelter in spring when growth commences by sprinkling light litter on the bed. The grass rises more freely when thus aided, and on occasions of sharp frosts in the month of May, loss by the freezing of the pushing points is avoided. Another system of shelter is secured by leaving the straws on the bed wholly untouched until the autumnal growth is stopped by frost, when the beds are cleaned and a good dressing of half-rotten stable manure is put on as a finish.

Mr. Hibberd insists on the presence of lime in considerable proportion in the soil as essential to a fine growth of Asparagus. He condemns the cutting of sprue as a wasteful weakening of the plant, and as explaining the often poor quality of the Asparagus grown in English gardens. He placed before the meeting samples of several qualities of growth from 3 feet, with a circumference at the base of the straws of 1½ inch to straws of 7 and 8 feet with a circumference of 2½ to 3 inches; this growth being entitled to the name "giant" Asparagus. As regards varieties, however, he insists there is but one, and it is impossible there should be more so long as the plant is grown from seed; the visible variations, therefore, must be attributed to local circumstances of soil, climate, and cultivation.

On the subject of an autumn supply we were warned in a general way it was not to be looked for, and perhaps was not often wanted. In his case a great supply was not needed, but a continuous supply was of the utmost importance. He had therefore set apart a sufficient extent of plant for the autumn cutting, and from the beds so reserved not a single head was cut of the spring growth. A free early growth was the natural result, and this ripened off early, and then the plant would take a rest. By means of irrigation in July and August a new growth was obtained, and this in a favourable season would continue until about the 8th of October, when frost would put a stop to it. But in the least favourable seasons the supply during August and September was often not far short of what the same beds would have produced in spring had they not been reserved for this special purpose. He placed upon the table a nice sample of table grass, the heads measuring 6 to 9 inches in length, and 1½ to 2 inches in circumference, with an abundant proportion of tender green top. Such Asparagus he averred was delightful eating with grouse or partridges, and probably in the more favourable parts of the island a supply might be secured even for an accompaniment to pheasants. His experiences had been acquired on the cold clay soils of the northern suburbs of London, and during some part of the time in the valley of the Lea, where frost and fog are frequent destroyers of garden produce as late as the end of May, and as early as the middle of August. Being exposed also to strong gales he had found it necessary to support his Asparagus with stout stakes such as are employed for the support of tall Peas. These are driven into the ground in such a way as to prevent the breaking of the straws, which would otherwise happen in a strong wind.

Not a word was said by the author about the relative values of English and French Asparagus, but from the beautiful examples of table Grass Mr. Hibberd displayed before the meeting it was evident that his taste inclines to the English custom of securing a green top full of flavour in place of the white Grass that is comparatively flavourless, though in such general esteem on the continent of Europe. It is something to see Asparagus equal to that of average growth in June, cut after a frost of 10° has given new colour to the woodlands at the close of September.

Mr. G. Norman's paper on Winter Salads was brief and practical. Lettuces and Endives receiving especial attention, and a vote of thanks to him concluded the first day's business.

Upon Thursday Mr. Shirley Hibberd presided, and there was a good attendance of Fellows and visitors. The first paper was that by Mr. J. Wright, which evoked considerable discussion of an instructive character, and it was followed by papers read by Mr. A. Dean, Mr. T. Laxton, and Mr. J. Smith of Mentmore, abstracts of the three first named being appended in the order they were read. The proceedings of this most satisfactory Conference were terminated by the customary votes of thanks to the Chairman and contributors of papers.

THE FOOD OF VEGETABLES.

[Abstract of a paper read by Mr. J. Wright.]

AFTER alluding to the unprofitableness, for purposes of utility, of vegetables of enormous size, and giving a striking instance of the hoe as a creator of wealth, dwelling on the importance of turning the virtues

of the atmosphere to the best account by good tillage, giving an example of nutritious vegetation and the reverse, as influenced by manures in Dr. Hogg's pasture as determined by the cows choosing one portion and rejecting the other, Mr. Wright said:—

But what is manure, or the ingredients which crops abstract, and which, as Liebig says, are "lost for ever," if not replaced by man? What are known as natural or animal manures employed in cultivation are obtained from vegetables, which, as Johnston says, contain "ready formed, that is formed during their growth from the food on which they live, phosphate to form the bone, gluten to form the muscle, oil to produce fat." Now if the food referred to is defective in the requisite constituents so must the animals be, and so must be the resulting manure. Such is the fact, and it is impossible to get nourishing food out of vegetables that do not contain it, as they cannot if it is not in the soil, but as they certainly will if it is there and within their reach.

Some persons condemn natural manure and extol the so-called artificial; others condemn the artificial and extol the natural. I think it is better to do neither, but to discriminate. Ville, the great French chemist, says land to which farmyard manure only is applied is being gradually exhausted, and that its fertility can be better maintained and crops better fed with the three ingredients—lime, potash, and phosphoric acid in combination with nitrogenous manure. Professor Wrightson says farmyard manure has no equal. Stephens, in his "Book of the Farm," says a ton of first-class well made manure should contain between 12 and 14 lbs. of nitrogen; 11 to 15 lbs. of potash; 8 to 9 lbs. of soluble salts of phosphoric acid (as in superphosphate); and 10 to 13 lbs. of insoluble phosphate, as in bones. As these are all the ingredients Ville asks for, and as the manure also acts mechanically in opening the soil, supplying silica, and eventually humus—which is the nursery of Bacteria or micro-organisms that render the nitrogen active by converting into nitrates—such a mixture of good things must be long in exhausting the land. It will feed the land and the crops; but—and here is the point—not one ton of manure in ten thousand equals, or even approaches, the standard named. The bulk of the material that gardeners have to work with does not half equal it, and a vast quantity is but a poor apology for the genuine article—the husk without the kernel, a dead body from which the spirit has gone.

Then come the value and the need of the concentrated essences known as artificials. Every gardener should have a supply of these, and he may then not only increase the produce of the soil, but improve it—storing the vegetables with food, without which, though they may be passable, they cannot be perfect. Phosphoric acid with potash, the former predominating, for the Brassica family; potash with phosphates for the Legumes or pod-bearers, also Potatoes; and nitrogen for every crop that needs a whip on to enable it the more freely and fully to abstract the substantial ingredients. With superphosphate of lime, chloride (or nitrate) of potash, the latter the more potent and costly, also nitrate of soda or sulphate of ammonia at hand, the gardener can improve his probably poor farmyard manure considerably, and indeed need not wait for it as so many men have to do till they lose their tempers and prejudice their crops.

When special manures are found to be good they contain the above named ingredients, and possibly others, which may act beneficially in certain soils; thus magnesia for Potatoes, soda for Asparagus and Carrots, and chlorine for Beet (both imparted by common salt), and a little iron for most crops. According to the experiments of Dr. Griffiths, principal of the Lincoln School of Science, many soils do not contain sufficient of this ingredient. His "Treatise on Manures," which is an admirable work, contains striking examples of half cwt. of iron sulphate (green vitriol) per acre increasing the crop of Potatoes, Turnips, Mangolds, Cereals, and Beans, while it cured the stubborn root disease of Cucumbers (according to the evidence of Mr. Crocker, of Ham Green Tomato fame), and gave him extraordinary crops. Passing for a moment from vegetables, Mr. Divers has recently stated in the "Gardeners' Chronicle" its efficacy in curing a fine Peach tree of yellows. I have seen the tree, and can pronounce the cure complete. For vegetable crops about a quarter to the square yard will suffice for experimental purposes, either in solution or powder, this to be applied only when the soil is wet to yellowish-looking plants and crops for producing colouring matter or chlorophyll.

But while the soil must be fed for feeding the crops it is possible to impair its productiveness by over-manuring, especially with matter from stables of milking cows, and decayed leaves. I once took possession of a garden that was like a mass of humus, through additions of that nature for generations, perhaps. A walking stick could be pushed down it to the handle easily. One plot, I was told, would grow Potato plants, but no tubers. I found that to be a fact, and recorded it in the *Journal of Horticulture* at the time. Peas were yellow and profitless. The soil was poisoned with acids, and lime was needed to neutralise them, also to set free the dormant nitrogen. It was given freely, as also was potash and bone meal. The effect was magical, and the crops of Potatoes and Peas, where they would not grow before, were remarkable. Why were potash and phosphates so much needed? Because there were none in the cowyard manure. The phosphates were drawn away with the milk. Manure from milch cows, especially if largely fed on grass and roots, is greatly over-estimated. There is little good in it to feed crops. It may make them grow, but the growth is comparatively worthless. Proof of this can be found in any cow pasture where the manure is not spread. The grass grows freely enough, but the animals refuse to eat it, and eventually tussocks form and pastures are spoiled. Manure from full-grown well-fed bullocks is very different,

for it is rich in phosphates and other nutritive or manurial properties. It is well then, as I said before, to discriminate.

If weak manure is supplied to the garden, and I have often had it so weak that it would not ferment when moist, mix half a peck or more of good guano in a load. The mass will soon heat then, and eventually its value for the land will be a good deal more than doubled. Instead of conflict between natural and artificial manures we then have combination, and the union is a happy one for whatever crops are fed with the preparation.

In conclusion the lecturer remarked:—Quick-acting nitrogenous manures, such as nitrate of soda and sulphate of ammonia (the former for light and dry, the latter for heavy and cold soils), should be applied early in the season to growing crops, never late in the autumn; phosphatic and potassic manures earlier still, before growth commences and before dry summer weather sets in, or they cannot be appropriated, because not dissolved, by the crops they are intended to support. Chemical manures have often been condemned as worthless, when the fault rested with the users in simply applying what was really good at the wrong time for attaining the object in view. These remarks are founded on practice. I think they cannot do harm to any, and may possibly be suggestive to some who may engage in the cultivation of food-producing crops.

POTATO IMPROVEMENTS DURING THE PAST TWENTY-FIVE YEARS.

[An abstract of the paper read by Mr. A. Dean.]

TWENTY-FIVE years ago we had no great wealth of variety in the Potato, and it is a significant fact that, with the exception of the Ashleaf Kidney, a sort which has kept its place chiefly because hitherto there has been a lack of first early varieties, there is hardly to be found in seed Potato lists one then in ordinary cultivation. It is still very much the fashion on the part of those who sigh after the days and years that are gone to declare that none of the modern Potatoes equal in quality the Regents, Lapstones, Fortyfolds, and other sorts of the past. We have had since the date I refer to myriads of good Potatoes introduced and plenty of bad ones. We have myriads of good Potatoes now also, and a far less number of bad ones, and we have at least an abundance of varieties which, whilst equal in quality to the best of bygone days, do by far excel them in robustness and productiveness. The Potato really has improved—the eaters of them have become less capable of appreciating them.

Then there has been no inconsiderable improvement in form and beauty. Those who saw, and remember, the singularly beautiful tubers shown at the various exhibitions held under the auspices of the International Potato Show Committee, must admit that in development of form wonders have been worked during the past twenty-five years. "But," exclaims the Potato pessimist, "beauty of form and smoothness of skin is no evidence of quality!" Perhaps not; but, on the other hand, neither is ugliness. If we have had some beautiful Potatoes of bad quality we have also had myriads of good ones, and the efforts of the International Committee were specially directed to the elimination of the bad and the expansion of the good, not only at the Crystal Palace, but through the Royal Horticultural Society in their gardens also. Form and beauty, beyond satisfying the requirements of the cultivators of refined tastes, have become marketable commodities also, for the handsomest samples always secure the best prices.

One of the chief factors in Potato development during the time previously named, however, was found in the introduction of American varieties. These came to us in myriads, generally characterised by similarity of appearance, but varying perhaps in colour. All were remarkable croppers, and if few possessed high quality or flavour, yet all did materially help to swell our Potato supplies. How many of these varieties introduced at the time with much flourish of trumpets have now gone to the eternal Potato bourne our lists of to-day will serve to show. Just one or two remain to us in their natural form and goodness, chief amongst which is the favourite Beauty of Hebron; the best perhaps, as it has been the most permanent of all the family. But our home raisers awakened to the need of doing something to counteract the flooding of our trade with American sorts, and further, alive to the value of these strangers as parents of better strains, they utilised the best for seed-bearing purposes, fairly skimming the cream off them and casting the residue aside as worthless.

Our esteemed friend, Mr. Robert Fenn, who had at Woodstock been raising varieties which were perfect in quality, but lacking in robustness and productiveness, was one of the first to utilise American varieties as parents. Many others presently followed suit, with the result, briefly put, that dispensing with all old sorts, and nearly all American varieties, we have a race of Potatoes which is productive, robust, gives good quality, and supplies the tables of the poorest in the land cheaply and abundantly. But apart from the Americans, which in spite of their comparative robustness still succumbed wholesale to the deadly effects of the *Peronospora*, there was this very fungus with all its dire destructiveness constantly forcing upon Potato men the need for battling with it for the preservation of our Potato stocks. It is idle to regard it as other than a terrible and a disastrous visitation, and in years past when we had none other to depend upon but Regents, Fortyfolds, Victorias, and similar tender though delicious varieties, there was at times reason to fear that the Potato crops of the kingdom would be absolutely decimated.

One of the first products of the Anglo-American Potato crosses was that famous variety, *Magnum Bonum*. Its history is pretty well known;

but in referring to the improvements in Potatoes during the past twenty-five years it would be impossible to omit reference to a variety which has proved to be so important a factor in the work of disease-resisting, and practically of conquering. Raised from the seed produce of the Early Rose, assumedly crossed with the Victoria—a once famous Potato, but now rarely met with—by Mr. Clark of Christchurch, it became so widely known and grown in a few years that probably it made more noise than any other Potato ever introduced to commerce. Fortunately for Mr. Clark and the community tubers of it and other varieties were sent to that once famous trial ground at Stoke Newington, over which Mr. Shirley Hibberd was the presiding genius; and so much was that gentleman taken with the variety that he introduced it to the Messrs. Sutton & Sons of Reading, who purchased the stock.

But even in raising a variety which presented so formidable a barrier to the progress of Potato disease there were not wanting critics who railed at its quality. If half a loaf be better than no bread surely a whole one is better still, and that much did Magnum Bonum give to myriads of Potato consumers, to whom in previous years the tender old kinds of Potatoes, under the deadly effects of the disease, gave no loaf whatever. It is, however, worthy of remark that in spite of the critics the Magnum Bonum is more largely eaten now than any other Potato. But having found so admirable a barrier against the tide of fungoid decay, raisers have not been slow to take advantage of it for the purpose of producing many other disease-resisting kinds, and possibly of much superior quality. We have now not one but a wealth of disease-resisters, and because of them have such an abundance of Potatoes that they can hardly be disposed of at any price. Really the salvation of the Potato and of the consumer has been the ruin almost of the trade, for with stocks so plentiful few want to purchase, and trade is almost unprofitable to growers.

Why, in the old disease days, before Magnum Bonum and other fine sorts came to our aid, we imported thousands of tons of Potatoes during the winter months from Germany, Belgium, and elsewhere. That trade has been entirely suspended, for the excellent reason that we grow plenty of Potatoes at home, not only for our consumption, but have an abundance to spare. It is true we import large quantities of early Potatoes from France, the Channel Islands, &c., but their consumption in preference to good home-grown old tubers displays a sadly vitiated taste, as in most cases they are more fit for pigs than for intelligent men. Mr. C. Fidler of Reading has informed me that the average price of Potatoes now in the market is fully thirty to forty per cent. lower than it was ten years ago, a fact which speaks volumes for the wonderful development of Potato production, the result of the possession of numerous disease-resisting varieties.

The following list of sorts affords some evidence of the change which has been effected in Potatoes within the past comparatively few years:—Beauty of Hebron and its white variety, Webber's White Beauty, a distinct early sort; Sutton's Early White Kidney, Seedling, Satisfaction, and Abundance, all robust and great croppers; Snowdrop, Schoolmaster, Magnum Bonum, Vicar of Laleham, The Dean, Reading Russet, Prime Minister, Chancellor, Reading Giant, White Elephant, Imperator, The Daniels, Lye's Conqueror and King of Russets, The Governor, The Bruce, Stourbridge Glory, and many others, nearly all great croppers, and creators of that wealth of Potatoes which contrasts so wonderfully with the comparative dearth of twenty-five years since.

IMPROVEMENTS AMONGST PEAS.

[Abstract of a paper read by Mr. Laxton.]

MR. LAXTON contended that, during the past quarter of a century, great improvements had been effected, especially in the directions of earliness, of handsome, large, and well-filled pods, and of dwarf later sorts, but that there is scope for further advance in fertility and hardiness, more particularly in the production of hardy market varieties; and he holds that continued and constant attention will ever be necessary to maintain the acquired earlier and dwarf characters of Peas, as the stocks are especially liable to deteriorate in these respects, chiefly from repeated shelling out previous to and in harvesting, and the destruction by birds, &c., of the earliest and dwarfest portions of the stocks before the bulk can be secured. Mr. Laxton also alluded to the two modes of improvement resorted to by growers—selection following natural or insect cross-fertilisation, which, contrary to the general belief, he considers does take place, although rarely in the Pea, through the instrumentality of thrips and similar small insects, and that the presence of "rogues," as the stragglers in a crop of Peas are termed, is more often due to this cause than has been suspected, but mostly to the natural tendency of the cultivated Pea to sport and revert back to the original type.

Artificial cross-fertilisation, as practised by Mr. Laxton, was also described as the other plan more recently adopted by raisers for the obtaining of new and improved varieties and the mode of proceeding, as from the flower of the Pea becoming naturally fertilised in an early stage of its formation, and some two or three days before it is fully expanded, the operation, which has frequently been considered a difficult one, although in reality very simple, must precede this. The lecturer divided garden Peas for shelling green into three gastronomic classes as follows:—

1, *Lamb Peas*, consisting of the small early sorts frequently eaten young with lamb in the early season in this country, and answering to the *petits pois* of the French.

2, *Ham or Bacon Peas*.—Those usually consumed with ham or bacon,

and which are generally round-seeded and of a more farinaceous character, and are eaten in a somewhat more mature condition.

3, *Marrowfats or Quality Peas*, consisting chiefly of the larger main crop or later wrinkled sorts, and which are sweet in flavour and of a buttery texture when cooked green.

That in order to meet the requirements for the above purposes and to suit the various soils, positions, climates, and seasons for which the gardener has to provide and the losses by deterioration, he holds that a larger number of sorts of Peas than are generally considered necessary must be maintained. Comparative tables were also given of the best sorts in cultivation twenty-five years ago and of those now in general use.

AWARDS AT THE VEGETABLE CONFERENCE.

Certificates were awarded by the Committees of Selection for the following varieties shown by the exhibitors named.

GREEN VEGETABLES.

Cabbages.—Hâtive d'Etampes, Messrs. Vilmorin, Andrieux & Co.; Offenham, Messrs. J. Harrison & Sons; Hardy Green Colewort, Messrs. J. Veitch & Sons; Red Dutch, Messrs. Dobbie & Co.

Savoys.—Early Elm, Dwarf Green-curved, and Vertus, Messrs. J. Veitch & Sons.

Borcoles.—Extra Dwarf Green-curved and Cottager's Kale, Messrs. J. Veitch & Sons.

Brussels Sprouts.—Deverill's Large Wroxton, Mr. H. Deverill; Paris Market, Messrs. J. Veitch & Sons.

Cauliflowers.—Veitch's Autumn Giant, Mr. J. Lambert; Pearl, Messrs. J. Veitch & Sons.

Globe Artichoke.—Green Globe, Mr. J. Lambert.

Spinach.—Viroflay, Mr. R. Smith; Prickly Seeded, Mr. W. Poupart.

FRUITS AND PULSE.

Vegetable Marrow.—Anglo-Indian, Mr. J. Chadwick; Long White, Mr. W. Palmer.

Pumpkin.—Rouge de Crimée, Royal Horticultural Society.

Cucumber.—Lockie's Perfection, Mr. T. Lockie.

Tomatoes.—Red Chemin and Mikado, Messrs. Vilmorin, Andrieux & Co.; Chiswick Hybrid, Royal Horticultural Society.

Beans.—(Runner) Neal's Ne Plus Ultra, Mr. G. Neal; (Butter) Early Golden Cluster and Filbasket, Messrs. J. Veitch & Sons; (Butter) Sutton's, Mr. R. Gilbert.

Peas.—Duke of Albany, Telephone, Prodigy, and Sutton's Matchless, Mr. J. Lambert.

Capsicums or Chillies (collection).—Messrs. Vilmorin, Andrieux & Co.

Maize.—Extra Early Sweet, Messrs. Vilmorin, Andrieux & Co.

TAP ROOTS.

Parsnip.—Dobbie's Selected Hollow Crown, Messrs. Dobbie & Co.

Beet.—Edinburgh Blood Red, Mr. Hugh Hanan; Dewar's Dwarf Red, Messrs. J. Veitch & Sons; Dobbie's New Purple, Messrs. Dobbie & Co.; (Turnip-rooted) Eclipse, Messrs. J. Veitch & Sons; (Dracæna-leaved), Messrs. Vilmorin, Andrieux & Co.

Carrots.—New Scarlet Improved Short Horn, The Novelty Seed Company; Long Red Surrey, Messrs. J. Veitch & Sons.

TUBERS AND BULBS.

Potatoes.—Reading Russet, Mr. J. Hughes; Reading Giant and King of Russets, Mr. J. Lye; Snowdrop and London Hero, Mr. E. S. Wiles; Suttons' Abundance and Reading Russet, Mr. W. Wildsmith; Adirondack and Early Puritan, Messrs. R. Veitch & Son; Favourite, Mr. E. S. Wiles; Veitch's Improved Ashleaf, Mr. J. Hughes; Wordsley Pride, Epicure, and Renown, Messrs. E. Webb & Sons; Suttons' Seedling, Prime Minister, Suttons' Abundance, and Cole's Favourite, Mr. J. Lambert; Vicar of Laleham and London Hero, Messrs. R. Veitch & Son, Exeter; The Rector and Edgecot Purple, Mr. E. S. Wiles; Reading Giant, Suttons' Abundance, and Hughes' Pink Perfection, Mr. J. Hughes; Suttons' Seedling, Messrs. G. Bunyard & Co.

For any new named seedling variety not in commerce, six tubers to be supplied for cooking, first-class certificates were awarded as follows:—

Victory (Mr. J. Lye).

Duchess of Fife (Mr. J. Hughes).

Edgecot Early (Mr. E. S. Wiles).

Talisman (C. Ross).

AWARDS OF MERIT.

Duke of Fife (Mr. J. Hughes).

Seedling (Mr. R. Clive).

Onions.—Giant, late White Flat Tripoli, for type, Messrs. Vilmorin, Andrieux & Co.; Queen, for type, Messrs. J. Veitch & Sons; Giant Madeira, for type, and large Blood-red Flat Italian, for type, Messrs. Vilmorin, Andrieux & Co.; Giant Zittau, for type, Messrs. R. Veitch & Son, Exeter; Brown Spanish, Messrs. Oakshott & Millard; Main Crop, Mr. Nicholas; Deverill's Improved Wroxton, for type, Mr. W. Pope; Brown Globe, Messrs. J. Veitch & Sons; Bedfordshire Champion, Mr. G. Wythes; James' Keeping, Mr. Muir; Flat, Yellow, or Brown Anglo-Spanish, for type, Mr. H. Deverill; Anglo-Spanish and Rousham Park, Mr. W. Pope; Reading, Mr. J. Hughes; Anglo-Spanish, Mr. Wingrove; Rousham Park, Mr. C. J. Waite, Mr. Bowerman, and Mr. Deverill; Ailsa Craig, for type, James' Long Keeping, Pinesfield, Advancer, and Cocoa Nut, Mr. Deverill; James' Long Keeping, for shape, Royal Horticultural Society; Ailsa Craig, for shape, Mr. W. Pope, Mr. W. G. Gilbert, Mr. J. Hughes, and Mr. R. Kneller; Black Douglas, for type, Mr. H.

Deverill; Black Douglas, for type, Mr. Murray; Blood Red, for type, Messrs. Dobbie & Co.; Southport Red Globe, for type, Messrs. J. Veitch and Sons; Southport Red Globe, for type, Royal Horticultural Society.

Leeks.—Lyons, for type, Messrs. Stuart & Mein; Lyons, for type, Messrs. Dobbie & Co.; Lyons, for type, Mr. J. Lambert; Musselburgh, for type, Mr. C. J. Waite; Musselburgh, for type, Mr. J. Lambert; Musselburgh, for type, Messrs. R. Veitch & Son.

Shallots.—Large red, for type, Messrs. Stuart & Mein.

Garlic.—Mr. R. Smith.

Turnips.—Early Milan (Red-top), Messrs. J. Veitch & Sons; Model White Stone, for type, Messrs. Dobbie & Co.; White Stone, Messrs. J. Veitch & Sons; White Stone, Mr. J. Lambert; Early Marvel, for type, Messrs. Harrison & Sons; Green-top Stone, Mr. R. Moper; Round Red Globe, for type, Messrs. J. Veitch & Sons; Round Red Globe, Messrs. R. Veitch & Son; Golden Ball, for type, Messrs. Dobbie & Co. and Mr. J. L. Ensor.

Kohl Rabi.—Early Vienna, green for type, Messrs. J. Veitch and Sons; Early Vienna, green, Messrs. J. Carter & Co.; Early Vienna, purple, Mr. C. Doman; Early Vienna, purple, for type, Messrs. J. Veitch & Sons.

SALADING.

Celeriac.—Large Smooth Prague, Messrs. Vilmorin, Andrieux & Co.

Radish.—Long Scarlet, Messrs. Vilmorin, Andrieux & Co.; Early Scarlet Forcing, Messrs. Vilmorin, Andrieux & Co.; Early White Forcing, Messrs. Vilmorin, Andrieux & Co.

Celery.—Wright's Giant, Messrs. Oakshott & Millard; Dobbie's Invincible, Messrs. Dobbie & Co.; Sandringham White, Messrs. J. Veitch and Sons; Sutton's White Gem, Mr. J. Lye; Standard Bearer, Mr. F. Taylor; Covent Garden Red, Mr. W. Poupert.

Endive.—Ruffec, from Messrs. Vilmorin, Andrieux and Co.; (Green Curled), Messrs. J. Veitch & Sons; (Moss Curled), Chicorée Parisienne d'Été, Messrs. Vilmorin, Andrieux & Co.

Lettuces.—(Cabbage), Lorthois, Messrs. J. Veitch & Sons; (Cabbage), Blonde Berlin, Messrs. J. Veitch & Sons.



EVENTS OF THE WEEK.—The Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster, at 11 A.M., on Tuesday, October 8th. The National Chrysanthemum Society's Floral Committee will have a meeting at the Royal Aquarium, Westminster on Wednesday, October 9th, at 2 P.M. The Crystal Palace Hardy Fruit Show will take place on October 10th, 11th, and 12th, the British Fruit Growers' Association holding a meeting in conjunction with this Exhibition on Thursday, October 10th, at 3 P.M.

— THE twenty-fourth monthly reading (second of the present season) in connection with the PRESTON AND FULWOOD HORTICULTURAL SOCIETY, will be given in the large room of the Castle Hotel, Market Place, Preston, on Saturday evening, October 5th, when Mr. Alfred Waters, of the Gardens, Farington House, will read his paper on "Brief Notes on Peach Culture. Failure v. Success." The chair to be taken by the President at 7.30 P.M.

— THE WEATHER here has been very stormy of late, with heavy rains and high winds. On Friday last, the 20th, we had thunder and hail. It completely riddled our pot Strawberries, and broke a number of our Chrysanthemums about 2 inches below the bud, leaving only one and two buds on some of them. The same has happened at other places around here; but we have had very little frost, not more than 2°.—GEO. HILTON, *Bolton-le-Moors*.

— THE CHISWICK GARDENERS' ASSOCIATION. — On October 11th, Mr. Shirley Hibberd will DELIVER an ADDRESS on Green Leaves.

— ANTHRACITE COAL.—The value of this form of fuel has been abundantly proved by many practical horticulturists, and some of the advantages claimed for the HENDREORGAN ANTHRACITE are as follows:—A ton will do the work of three times its bulk of coke, consequently in addition to the saving in cost, there is the saving of labour in cartage and handling, besides the decreased space required for storage; it is smokeless; it requires much less attention, fires being good for at least twelve hours after being made up; and it gives a steadier and greater heat by 5 to 10° than is obtained from coke. It is supplied from 23, Lime Street, London, or the Swansea Valley Collieries, South Wales.

— DEATH OF THE VEN. ARCHDEACON LEA.—With much regret we learn that Archdeacon Lea died on Tuesday, September 24th last, at his residence near Droitwich. The deceased gentleman was the author of several practical and useful articles on small farms which appeared in this Journal, and were subsequently published in book form. Archdeacon Lea was educated at Brasenose College, and gained a second class in Literæ Humaniores. He took his B.A. degree in 1842, and the M.A. degree in 1859. In 1843 he was ordained deacon by Bishop Peps, the then Bishop of Worcester, and priest in the following year. The first curacy to which he was appointed was at Rowington, Yorkshire, and in 1844 he was appointed to the curacy of Tardebigge, in this county. In the following year he was removed to St. Peter's, Droitwich, under the Rev. J. R. Ingram, the then vicar, who resigned in 1849. Mr. Lea was next appointed by Earl Somers, the then patron, to the vacant living, which he held till 1887, when he resigned. He was made an Honorary Canon of Worcester in 1858, and was appointed Archdeacon of Worcester in 1881, succeeding the late Archdeacon Hone. He took a deep interest in public affairs, and his much-regretted decease will cause a vacancy in many public bodies. One of these is the County Council, Archdeacon Lea having been elected an Alderman; he was also a county Magistrate, and a member of the Droitwich Board of Guardians, the meetings of which he attended regularly. He was seventy years of age, and his tall erect figure will be greatly missed in the Archdeaconry in which it was so well known. He took great interest in fruit and Rose culture, and won many prizes with products of the rectory gardens at Droitwich. He was also an admirer of game poultry, an aviary of which he kept at his residence. The funeral took place at St. Peter's, Droitwich, last Saturday at two o'clock.

— THE BRITISH FRUIT GROWERS' ASSOCIATION (President, Lord Brooke, M.P.) intend holding a meeting and Conference at the Crystal Palace, Sydenham, on the first day of the Hardy Fruit Show, Thursday, October 10th, at 3 P.M. Important papers on fruit culture will be read by Mr. T. Francis Rivers and other eminent authorities. The Hon. Secretaries are Mr. Lewis Castle, Merton, Surrey, and Mr. William Earley, Ilford, Essex.

— OUR attention has been called to useful material—namely, ALLPORT'S PATENT WIRE-WOVE WATERPROOF ROOFING AND PANEL BOARDS, which consist of waterproofed paper boards or sheets made upon a foundation of fine japanned or tinned steel-wire gauze. For the sides of cheap houses, frames, &c., or for roofing sheds and similar buildings, it will, no doubt, be found useful, as it is admirably calculated to endure exposure to weather influences. Our samples were received from the Patent Wire-Wove Waterproof Roofing Company, Limited, 108, Queen Victoria Street, London, E.C.

— DESTROYING RATS AND MICE.—In answer to "L. K.," I quote a method which I have taken from an old book for getting rid of rats or mice. The gardeners in the vicinity of Paris use a simple trap for these animals, which consists of an earthen vessel or jar, rather narrow at the mouth, but much wider towards the middle. These are sunk in the ground, sometimes partly filled with water, and at other times empty, the mouth being placed level with the surface of the earth, and slightly covered with leaves, twigs, or straws, forming a trap into which many of them fall.—A. G. FRAMPTON.

— THE ECCLESALL (SHEFFIELD) FLORAL AND HORTICULTURAL SOCIETY.—The annual dinner of this Society was held on Wednesday, September 25th, at the Prince of Wales Hotel, Ecclesall. There was a good attendance of members. Letters were read regretting inability to be present from the President (Mr. J. B. Mitchell Withers), Mr. Charles Belk, Mr. David Davy, and Mr. C. E. Vickers. The Rev. George Sandford, vicar of Ecclesall, presided at the dinner. The Society was reported to be in a very prosperous condition, there being an increase of 164 entries. The balance-sheet showed a balance of £18, which was slightly less than last year, owing to the very unfavourable weather on the day of the Show. After the toasts had been gone through, various songs and recitations were given by Messrs. Frost, Willerton, Latham, Lomas, and others.

— GILBERT'S SURPASSE TOMATO.—I see by last week's issue of the Journal that "S. T. W." finds this an excellent Tomato for out of doors, but it has not done well with him under glass. Here we have it under glass with twelve varieties, and we like it as well as any of them. The fruit is of medium size and suitable for market. Laing's Pedigree much resembles it; in fact, I can see little difference between them.

Both are good and well worth growing. I have grown *Sensation* two years under glass, but it sets badly, and does not grow so large as I expected. *Vick's Criterion* has done as well as any with me. It is a handsome fruit, and sets well. Perfection is of great size, sets well, and is of a good flavour. *Queen*, a small Plum-shaped variety, fruits immensely, and is the best flavoured Tomato I know. It is a splendid dessert fruit.—G. HILTON.

— *COLEUS GIL BLAS*.—During recent years several valuable additions have been made to *Coleuses* till we have now varieties which are as remarkable for the elegant form of their leaves as are others for their diversified markings and brilliant colours. *Gil Blas* is one of the best among new varieties, either for growing into specimen plants or for supplying suitable material for decorative purposes. It is a strong grower, and if given plenty of room develops naturally into shapely plants. The leaves are large, and the groundwork of a pale yellow colour, spotted and suffused with crimson magenta when growing close to the glass in full sunshine. This variety is remarkably handsome and showy. Well-grown plants placed singly in water, and used for house decoration, cannot fail to find favour wherever plants noted for the rich markings of their foliage are appreciated.—H. D.

— *SALVIA PRATENSIS*.—This native plant deserves a note of recommendation for the back row of the herbaceous border. If fairly treated its long spikes of blue flowers, often numbering two to three hundred, continue to rise for two months in succession, and form an agreeable contrast to the almost universal *Compositæ* now in bloom. Like other strong growing subjects it should be divided at the roots every few years, watered in dry weather, and the stems which grow 5 to 6 feet high tied up in good time. It is one of the best honey plants, as the bees swarm upon it during bright weather. It is equally attractive to moths, by visiting it at night with the lantern good captures may easily be made. There are said to be both red and white varieties; these I have not seen, and should be glad to obtain.—GEO. WALL, *Breakspears*.

— *MANDEVILLA SUAVEOLENS*.—On page 260 of last week's issue attention is called to this grand old climber by Mr. G. Abbey, and he asks who has tried it in a cool house or against a wall. At Battle Abbey, Sussex, I have seen it growing outside and flowering most profusely. I do not know if it still remains. Its greatest enemies when grown indoors are thrips. In the old nurseries of Messrs. Rollisson's at Tooting when I was a boy it occupied a large space in their conservatory where it flowered magnificently, and beside a pillar adjoining the above was the old neglected *Hovea Celsi*, now seldom seen, which used to flower freely, its bright blue flowers being very attractive. I have seen *Solanum jasminoides* growing outside trained against a house in Southsea, and flowering grandly. Although there are instances of such plants growing outside it does not say they are hardy, but it shows what can be done with many of our so-called greenhouse climbers, &c., in favourable situations.—ALFRED OUTRAM.

— *THE WALLFLOWER*.—The Wallflower in its cultivated state is perfectly familiar to all, but it may not have been the happiness of all to see it in its native habitat, the crumbling walls of some old ruin. While most plants delight in a good body of soil, others seem to thrive under the most adverse conditions, and amidst the cracks in the masonry of some old abbey, where we should expect the lack of earth, the insufficiency of moisture, the scorching sun, and the fierce rush of the breeze to render existence impossible, we often find a perfect garden. We have in such positions seen the Wallflower, the Bugloss, the Snapdragon, Harebells, the Stonecrop, and even such plants as the Elder and the Dog Rose, growing in wild profusion. To this short list many other flowers might be added, and the stone fences that are so common in some parts of the country yield equally "happy hunting grounds" for the botanist and lover of plants. The common name of the plant, Wallflower, is, of course, bestowed upon it from its being so essentially a lover of old walls, but we sometimes find it referred to as the Gilflower, or Gillofer, a corruption of the French *Giroflier* and Italian *garofano*. We need scarcely remind any who read these remarks that the etymology of our language was in mediæval times in a very chaotic state, and we find the plant appearing in various old authors as the *Gilofre*, the *Gyllofer*, *Jereflouris*, and *Gariflus*, all more or less corrupt renderings of the Latin *Caryophyllum*, a name bestowed on it from its Clove-like odour. The name was, however, originally bestowed on the true Clove, a species of *Pink*; and while some of our earlier writers refer to this latter plant as the *Gillofer*, later authors have transferred the name to the Wallflower.—(*Assell's Familiar Wild Flowers*.)

— *CARNATION VALENCIA* is one of the most useful of the whole family of perpetual flowering Carnations. In habit of growth its characteristics are great vigour combined with sturdiness. The flowers are large, full, and deep crimson. Among the many varieties we have grown at various times, *Valencia* easily bears the palm for producing the greatest quantity of flowers from a given number of plants. Unfortunately some of the most beautiful varieties of the family under notice flower but little till the early spring months, although the period during which Carnations are the most appreciated is from the present time till Christmas, and all who require a good supply of these deliciously scented favourites should make a point of striking plenty of cuttings during next February and March. Those who possess plants set with flower buds should now place them near the glass in a light structure, give abundance of air on all favourable occasions, and keep a gentle heat in the pipes when the weather is cold and foggy. To secure flowers of good size and colour, diluted liquid manure should be given two or three times weekly, with an occasional supply of soot water.—H. DUNKIN.

— *EALING DISTRICT GARDENERS' MUTUAL IMPROVEMENT SOCIETY*.—The annual general meeting of members was held last Monday evening, when a very satisfactory report and balance sheet was presented. On Wednesday evening next, the 9th inst., the opening of the autumn session will be in the form of an address to the members and their friends by Shirley Hibberd, Esq., to be given in the Victoria Hall, Ealing, at eight o'clock. Some interesting exhibits will also be staged, and it is the intention of the Society to encourage the production of these at the weekly meetings by awarding marks according to their quality, and at the end of each session the holders of the greatest numbers of marks will have gardening books presented to them as prizes. Mr. Hibberd's address will be followed by others from Dr. Masters, the Rev. Percy Myles, Messrs. R. Dean, J. Hudson, A. Wright, A. Dean, Geo. Gordon, and J. Fraser. On Wednesday, October 30th, a concert and entertainment in aid of the Gardeners' Orphan Fund will also take place in the Victoria Hall, under the patronage of several of the leading inhabitants of Ealing, and a great success is confidently expected. There will be no meeting of the Society on November 6th, as that is the date of the annual Chrysanthemum Exhibition by the Ealing, Acton, and Hanwell Horticultural Society.

— IN Consul-General Playfair's report to the Foreign Office on the agriculture of Algeria, it is said *VITICULTURE* in that country is beset with many dangers. In spring, hailstorms frequently destroy the young shoots; the flowers are often ruined by fogs; and the ripe fruit by the sirocco. The most serious enemy is, of course, the *Phylloxera*, but the officials have been fairly successful in dealing with this pest. Another is the *Altise*, a small beetle that causes great destruction, particularly when in its larval condition. The mode of killing the *Altise* commonly adopted is to place bundles of grass and Vine cuttings around the vineyard when winter is approaching; in these the insects conceal themselves in large compact masses, and the whole is then set on fire. Other diseases are the *Oidium*, *Anthrachnosis*, *Peronospora*, and *Chlorosis*. It is calculated that the want of intelligent treatment of these diseases causes the owners of the vineyards to lose annually nearly a third of the crop. The Olive seems to grow everywhere in Algeria except in marshy ground, and attains dimensions quite unknown on the northern coast of the Mediterranean. At present, however, from careless cultivation, the plant has not proved as remunerative, nor have its products been as good, as in Europe.—(*Nature*.)

— THE British Consul at Bogota, in his last report to the Foreign Office on the *AGRICULTURAL CONDITION OF COLOMBIA* says that for Tobacco cultivation in that country no manure is used, and the same land is used over and over again for an indefinite number of years. In some districts, where disease has completely exterminated the Tobacco plantations, it has been found that when plants are brought from other districts they are not attacked for a few years, but ultimately they are also destroyed. This, perhaps, might be avoided by constantly importing fresh seed; but the experiment was tried on some of the best Tobacco land in Colombia, with the result that as the seed brought from inferior districts began gradually to improve by transportation to the better soils, it became more liable to disease, while the plants grown from seeds brought from the better districts were attacked at once. Another instance of the ignorance of scientific agriculture in Colombia appears in the case of Cocoa. It is most carelessly cultivated, though it is a crop which requires constant care and labour to weed and clean the ground, and free the trees of the numerous insects, especially the cater-

pillars, which infest them. A most destructive disease has lately attacked the trees in the south of the Tolima, which is one of the very richest districts in Colombia. This disease does not seem to have been investigated, and no remedy has been suggested, but the extent of its

APHELANDRA CRISTATA.

At a recent meeting of the Royal Horticultural Society a cultural commendation was awarded for an uncommonly fine example of the



FIG. 37.—APHELANDRA CRISTATA.

ravages will be understood from the fact that one of the plantations attacked produced only 175 lbs. instead of 18,000 lbs. of Cocoa, an astonishing and deplorable decrease.

above named handsome old plant, from the Pendell Court Gardens. The flower heads are much larger and of a brighter colour—a rich shade of red—than any other cultivated Apelandra, and when the plant has

attained good size it is especially attractive. Mr. F. Ross favours us with the following particulars :—

"The specimen from which your figure is taken was from a standard plant some 6 or more feet high, having about 3 feet of stem, with a dense bushy head about 4 feet through, every shoot of which flowered similar to the one figured. Although planted out in this instance, yet it makes a capital pot plant; indeed, in years gone by it was frequently used for exhibition specimens. Its culture is easy, and similar, whether grown in a pot or planted out. After flowering we cut the plant hard back, which induces the formation of several leads, selecting as many of the strongest as will be needed to give the plants a well-furnished appearance; afterwards repot, and otherwise encourage growth, keeping the plant in a light position in a moderately warm and moist stove. A good rich and strong loamy compost best meets its requirements. We keep it free from insects, and as sure as September comes round it yields an abundant crop of its brilliant flowers. Some growers recommend enforced rest after flowering, but I have never seen any advantage from this treatment. It is easily increased by cuttings in the usual way."

TREATMENT OF SOILS AND MANURES.

IN reply to Mr. Tonks' remarks on page 239, if he thinks I am offended he very much mistakes my feelings, and I will not follow his example by seeming to be exasperated.

Mr. Tonks is not satisfied with what I have written, but adds something I have not stated. I do not deny authorities so far as they are used for information and enlightenment, but where are we to stop when scarcely two authorities agree in themselves on many points? Would Mr. Tonks advise us to stop where our tutors left us? I regard instructions as being given for us to develop, and so to improve ourselves. How many excellent gardeners have instructed pupils who in time have found reason to adopt different methods, and thereby brought about better results? Are they ignorant still?

I am sorry Mr. Tonks spent the greater part of his time in ignorance, as fifty years out of sixty is a long time to live in such a state. My age is only half that of Mr. Tonks, and I feel flattered to learn that my mind was capable of perceiving what is right in one-third of the time that it took him to accomplish.

Carbonic acid is carbonic acid, and not carbonic dioxide, and I must repeat that the formula is H_2CO_3 , and the carbonic acid of the air that Mr. Tonks speaks of is not carbonic acid, but carbonic dioxide, CO_2 . I will quote Johnston and Cameron for his information, page 36—"The compound commonly called carbonic acid is carbonic dioxide CO_2 ; real carbonic acid would have the composition given above, which is H_2CO_3 ." Again, on page 37, "Acids are bodies containing hydrogen." As CO_2 has no hydrogen I think Mr. Tonks must confess that he is wrong. In what form carbonic acid exists has nothing to do with the question. The quotation from Watts in the "Dictionary of Chemistry" substantiates my argument that CO_2 is an anhydride.

I am not such an ignoramus as to suppose that carbonic dioxide of the air occupies the whole space, the quantity is very small. Carbonic dioxide is taken in, and at other times given off, by the plants. If a field or piece of land is dressed with fresh lime, and this is left exposed to the action of the air, it absorbs carbon dioxide and forms carbonates; also carbonic dioxide is really taken up and carried down by the rain, and mixes with other ingredients, forming compounds. These compounds are taken in, the calcium, soda, &c., used by the plant, yet the carbon of which half of the dried plant is composed is thrown off or down, and not used. I have stated that CO_2 is absorbed by lime; this is only a plain way of putting it. The real fact of the combination is that hydrogen being present the compound of H_2CO_3 takes place first, and then combines with the lime and forms carbonates. I think it only right that I should make my contentions as plain as possible, whereas if CO_2 is passed through lime there would be no chemical reaction, but only an apparent electrical shock, but in the case of a chemical reaction carbonic acid is taken in water thrown off, and carbonate of calcium and caustic hydrate is the composition left, which most gardeners and farmers call lime. I know, and knew before, that animals cannot live in carbonic dioxide, also that the test given I used in my school days. I was aware that carbonic dioxide was found high and low, even as high as Mont Blanc. This I attribute to the different currents of air. If the gas was lighter than the air it would all ascend.

The forms I spoke of as the various salts or the oxides of metal elements—viz., soda, potash, &c., in combination with carbon, is the carbon divided from or decomposed before being taken in by the plants, or is the compound taken in by the plant decomposed, and the potash and soda used and the carbon thrown off. I have

sufficiently disposed of Mr. Tonks' remarks about phosphorus in my last article written before his reply was printed. The uncertain manure has nothing to do with me. If prepared as I stated there will be no uncertainty, but, like artificial manure, if left exposed to all atmospheric influences both would be useless. Most people know by the sensible reduction of quantity it is harmful to leave artificial manure unprotected. Farm manure is different, it loses its vegetable-producing qualities, but does not diminish in bulk perceptibly. When Mr. Tonks speaks of the advantage of 1 cwt. of artificial manure over farm manure, he means a manure properly taken care of and one that is neglected. I am writing about the neglected as being carefully looked after and protected. Farmyard manure in the fresh state has 28.24 per cent. of organic matter, three months exposed 16.53 per cent. What would be the result with longer exposure? My experience is that manure is more abundant in the country than near London, and the meaning of Latin adages can be found in dictionaries.

In reply to "W. S.," on page 264, I am sorry he should have been put to so much trouble, owing to a slight mistake. The sentence on page 173 should have read, "The larger part of soil being inorganic proves that the mineral elements are far in excess of that required by plants. Is it possible to exhaust the soil of mineral constituents by heavy cropping without returning any of those minerals to the soil?" The next sentence confirms this. They can be reduced by bad cultivation, but not exhausted.

Respecting my "assumed scientific manner," I will ask "W. S." whether it is presumption to have passed through all the stages of agricultural chemistry under qualified men, and to bring my "assumed" knowledge of the subject to bear upon the practical cultivation of vegetables, &c., and thereby produce on ground that was practically sterile or barren such crops as others had failed to procure, and after having been told I should fail, and this with only the resources at hand? Does the presumption come in when I try to put others in the same way of getting the best results with what they have at command? Will "W. S." state where the "unscientific" treatment comes in, and give the readers of this Journal the benefit of his knowledge in garden chemistry? I must thank "W. S." for supporting me in my endeavour to make the best use of all manures at hand.—G. A. BISHOP.



CHRYSANTHEMUMS IN THE SOUTH.

THE time is now fast approaching when Chrysanthemums become more interesting, and as many persons may be glad to know something about the plants in the south I have jotted down a few notes hurriedly made during a short tour amongst old friends quite lately, but not with "the object of viewing the nakedness of the land," as was attributed to me some time since by a correspondent. That the season in the south of England will be an early one no one will dispute, as the buds, crown and otherwise, came at early dates, in some instances too much so to please experienced cultivators, but no doubt they have taken the precaution of not putting all their eggs in one basket, as experience teaches growers that it is more advantageous to grow extra plants of well known and tried varieties than it is to grow fanciful varieties of which they know little. Cultivators have the opportunity of selecting early and late buds of the same sort, so as to extend the season of any particular variety. From what I saw I should think the coming season is likely to be a good one amongst Chrysanthemums, especially with plants grown for the production of large blooms for exhibition.

WARREN HOUSE GARDENS.

My first call was at Warren House Gardens, the seat of Lady Wolverton, where visitors are certain of a kindly welcome by Mr. Woodgate, the popular Hon. Secretary of the Kingston Chrysanthemum Society, and an enthusiastic cultivator. He not only grows to win prizes, but he does not forget the home display, as he has many early varieties to prolong the season; neither does he confine the number of blooms on the plants in all cases to the orthodox three, but for the sake of a few extra to cut from he allows the plants to carry more branches. The plants are grown during the summer in the kitchen garden, having an open position on the sides of the paths, which are well sheltered from south-westerly winds. Earwigs have been in great abundance this season, and taking the earwigs from the traps each morning they are put into bottles with stoppered corks for convenience. The "take" that morning was quite 500. Mr. Woodgate, for curiosity and to prove the fallacy of those who say that earwigs are not injurious to the plants, allowed them to have a "roving commission" over one plant—Duchess

of Albany, the leaves of which were riddled, and to make sure that earwigs were responsible for the depredation he had taken steps to carefully examine the plant in question at various times during the night. The other plants looked well, being stout, yet not gross, but hard and well matured, the leaves of good size, thick, and leathery, and of a good colour, not a yellow or pale coloured plant to be seen, which was a new experience to me. The buds also in most cases had shown at good times to develop fine blooms. The plants were not tall on the whole except, of course, a few of the Japanese that must "go up" to produce satisfactory blooms. Violet Tomlin, Miss M. A. Haggas, both promised as well as their parents Princess of Wales and Mrs. Heales, having good foliage, stout flower stems, and well formed buds, almost certain indications of blooms to follow. These had reached a height of 7 feet. Queens average 6 feet 6 inches, and were amply clothed with good leaves, neither too large nor too small. The buds in this section were coming well to time to perfect shapely blooms. Avalanche was growing well, the flower stems and buds reminding us of miniature drumsticks. The Wolseleys, Alfreds, Tecks, and Heros, as they are familiarly called, looked well, the latter quite dwarf and carrying large leaves. The former two were dwarf compared to their growth sometimes. Early varieties, such as W. Holmes, a brightly coloured useful sort; Duke of Berwick, Fernand Feral, Hiver Fleuri, and many others too numerous to mention were giving early promise of useful blooms. A variety always welcome evidently meets with much favour, Elaine, judging by the numbers and appearance of the plants. Mr. Woodgate has good reason to be satisfied with his plants, which number nearly 500.

MORDEN PARK.

Morden Park was our next call, where our old friend Mr. Gibson received us with his usual heartiness. The locality there being low lying is in favour of a season like the one we are now having, encouraging the production of large and good blooms. I should say having much more moisture in the air during dry weather than where the position is higher, drier, and more exposed. The plants were arranged in one block in a sheltered yet sunny position. Mr. Gibson knows the necessity of allowing plenty of space between the rows, both for the welfare of the plants and convenience of attention to their wants, and as the whole stock is arranged close to Mr. Gibson's cottage it would not be a difficult matter to find him any evening, so engrossed is he with their growth. Judging by the appearance of the stock generally, and they will also bear examination individually, opponents of this "old hand" must not "play light" if they mean to win. The plants are strong right from the base, showing they have had early attention as well as during the summer; different from some one sees sometimes, being no thicker at the base than cedar pencils, then at about 3 feet from the ground a spasmodic kind of help has been given them, and they bulge out in thickness, not at all in accordance with their base. None of this is seen in the Morden Park plants; steady progressive growth, producing good leaves, some would say rather pale in colour, but of that healthy tone and feel which men of experience know must result from the water used. The wood is matured, not too much to cause contraction of the sap vessels. The buds are formed mainly about the time required; of course, in a number there must be some too early for the shows, but they are by their present appearances indicators of what are to follow. On the whole Mr. Gibson thinks they are rather taller than usual, but quite as good as he has had them. The Queens promise remarkably well, averaging about 7 feet high, with buds in all stages. Jardin des Plantes, John Salter, Prince Alfred, Nil Desperandum is here always good, this year being no exception. Mabel Ward is always looked for in the stands from Morden, and this year I fancy not in vain. Refulgens will be this year, I fear, very early, which will be annoying, as the promise is so great. Edwin Molyneux, Avalanche, and M. A. Délaux promise by their extra fine foliage to develop good blooms. The finest plants that I have ever seen of one variety are here; I allude to Grandiflorum. Many who happen to read this, and who are conversant with the blooms shown by Mr. Gibson, will say, "Of course they are always good." Such stems and leaves! No wonder they turn out good flowers. Pompons and Anemone Pompons are more largely grown here than hitherto. Taken all in all a busy season, as well as we trust a successful one, will be experienced.

HECKFIELD.

The number of plants here cultivated for large blooms is somewhat reduced owing to diminished requirements, but the number of "bush" grown plants has been increased, of which the single varieties, as well as Anemone Pompon and Pompon sorts, are conspicuous, and capably grown they are, being clothed with foliage down to the pots, and giving promise of a splendid display later on. The large flowered varieties are perhaps not so strongly grown as in the past, yet they present a remarkably healthy appearance, being clothed with stout leaves and furnished with promising buds. Some varieties have grown extremely tall, owing to the early formation of crown buds which were discarded, while the bulk of sorts average 4 feet to 7 feet high. Avalanche here shows its extremely useful habit of growth, carrying stout foliage, thickly set on almost self-supporting stems, and with most promising flower buds.

SWALLOWFIELD PARK,

The seat of Sir George Russell, near Reading, has become somewhat famous in the Chrysanthemum world through the success achieved at the exhibitions during the last season, especially by Mr. Allen, ably

assisted by his two sons, the eldest of whom acts as foreman and grower. The whole of the plants are arranged along the sides of a path in the kitchen garden, and cannot number much less than 600, forming much the longest avenue I have yet seen. That the position and the treatment the plants have received agree with them no one can deny who inspects them, and with such grand houses as are here to flower them in, opponents of Mr. Allen must not reckon too lightly wherever he is met. On the whole the plants are not so tall as in some seasons, but they are strongly grown without being gross, the leaves of good texture and colour, and good results may be expected. All the leading varieties are found, and some which are useful only in point of numbers or strong personal taste. The Queens were most promising, Lord Alcester especially so, Mr. Allen being no doubt desirous of repeating his success of last year with that variety, with which he secured honours at Kingston for premier incurved. Jeanne d'Arc, Lord Wolseley, Barbara, Princess of Wales and its sports, Jardin des Plantes, and numerous others, the mention of which would serve no useful purpose, but which will, I have no doubt, have to be chronicled later on. Here was growing a fine stock of Mrs. Falconer Jameson, which showed by its dwarf habit and robust leaves that in that respect it is a worthy addition to our short list of low growing varieties.—E. MOLYNEUX.

A VISIT TO THE BULB FARMS OF HOLLAND.

[A paper read before the Nottinghamshire Horticultural Society by Mr. Alfred H. Pearson.]

(Continued from page 273.)

As a rule we have to wait about a week after the Hyacinths are fully out to see the early Tulips, and a few days longer for the double and later ones. This year they bloomed very closely together, and we could see them on the same day; so we will run round a typical Hyacinth farm in the morning and a Tulip farm in the afternoon.

We are staying at Haarlem, the centre of the Hyacinth district, and so well known that all Dutch bulb-growers put "Near Haarlem" on their English catalogues, even though their places are situated about as near to Haarlem as Southwell or Edwinstowe are to Nottingham. Leaving our hotel at 8 A.M., we can take a steam tram to our destination, about twelve miles distant. Our host meets us at the village, and we at once start on a tour of inspection. The land is all divided, by low shelter hedges, into squares of about one-third of an acre each. First we come to some land occupied with Potatoes last year, now a nursery for young stock yearling Hyacinths. There are three rows of beds in each division between the hedges, and about 20,000 "babies" in each row of beds; next we come to several pieces that were Scilla sibirica last year, and here are millions of seedlings on the ground, but the last have been taken up; these will be dug in along with the manure for Potatoes. This nursery is famous for Scillas. We can see acres of them; they were out of bloom, but last year they were lovely when I visited them. Walking on, we come to several enclosures which were last year filled with Hyacinths, and which are now planted with Lily of the Valley; then to a number of pieces where the ground seems empty, but is neatly levelled down; there are Gladioli and Ranunculuses here. But what is that man doing with the barrow and scoop? He has a mixture of cowdung and water in the barrow, and is artistically spreading it over the surface of the land, where it makes a thin crust something like the inside of a thrush's nest, and prevents the sand blowing away. Next we cross a wide ditch, and enter some new land that was levelled last year; here we find the beds filled with common Narcisuses and Tulips. We meet an old man who touches his hat and politely gives us "Good day." Our host says, "That is our oldest workman; he is eighty-three, and is always busy; we never tell him what to do, he can always find plenty of work." We inquire about wages, and are told that the men are still on short hours—from 6 A.M. to 7 P.M., so their wages are about 2s. per day; shortly they will work long days, from 5 A.M. to 8 P.M., and then they have 2s. 6d. The old man keeps these hours, and grows some bulbs of his own, and for years has rose at 3 A.M. to work a couple of extra hours in the morning, and often puts in an hour at night.

We must walk on, for the sun is getting hot and time flies. We come back to the old ground and reach a piece devoted to "mothers"—hollowed bulbs and crossed, and again beds of one-year bulbs. You will notice that each sort is in duplicate, some in triplicate, half a bed or a whole bed of each; that is to prove the stock and to see if it is free from disease. Here we come to bed with blanks in the lines; disease has shown itself here, and that bed, although carefully rid of every tainted bulb, will not be propagated from; the next, which is quite healthy, will be used. As we pass out of each section we notice a large stock of reed; this has been used for covering the bulbs in the winter, and the Dutch growers say that we in England, as a rule, do not take half enough care of our bedding bulbs during the winter to ensure a good display in the spring. Most of us know how disastrous a severe winter is to unprotected bulbs in beds, and I remember some few years ago that a number of small circular beds at Chilwell, which were filled with Tulips for trial, presented at the time of blooming a most curious appearance, having perfect blooms all round the outsides, whilst the centres were spoilt. This was owing to their being raised in the centre so that the snow was there, rapidly melted, whilst around the outer circumference it remained and protected the bulbs from frost. Ah! here is the fell disease again, as we see a blank at the end of the bed; no, that is where the rats have been at work; they often play sad havoc

during the winter, when they get under the reeds and snow, and cannot be seen.

We must hasten on, for we want to see the patch of "Emperor" Daffodil with 10,000 bulbs all in bloom. What a sight it is when we reach it; surely anyone would go Daffodil-crazy here! I feel touched a little myself. On the next square are nearly as many "Empress," and our old friend "Horsefieldi" by thousands close by. Those who only see these beautiful plants grown singly can have little idea of the effect produced by these huge masses with their luxuriant foliage. Leaving here, we go down to some fresh land planted with Hyacinths—somehow they look brighter than ever they do with us; that is because we do not plant them thickly enough to get the true effect. Here they plant the beds according to the size of the bulbs, beginning with the largest, which are set about 6 inches apart each way, and graduating them down to the smallest of the same age which stand thicker; not very artistic, you will say, but it gives a grand effect of colour *en masse*. The one and two-year bulbs are seldom planted near the older ones, as the growers don't like "to have all the eggs in one basket," in case of spring frost, &c., added to which a change of land is beneficial, so that most of the best growers have farms at a distance where they grow the young bulbs for one or two years and then finish them on the very best land they have. Now we come to a bed of Hyacinths all one colour; surely they are "Robert Steiger!" Yes, and just for curiosity we will count them. Thirty-nine beds 10 yards by 1 yard of large bulbs, and three beds of small; 700 on the first bed, and more on the others; not less than 50,000 of this one variety, and only one man's stock.

There is much more to be seen, but we are tired of looking, and before we leave we want to run down over the canal there and see the old lake of Haarlem which was drained during this century. The land is much lower on the other side of the canal, being 18 feet below the level of the sea, whereas the general run about here is 8 feet below sea level. Looking down from the canal bridge we seem to be on the edge of a basin of which the canal forms the rim all the way round. This basin, which is the old lake bottom, is perhaps twelve miles across; the land is strong, and is used mostly for corn growing. Crossing about the centre is a large canal, and into this the water is lifted by wind-power pumps from the ditches, from thence into the outer canal, and finally into the river, whence it goes into the sea at low tide, and is pumped out when the tide is too high. A similar system prevails all over this part of the country. Each wind-power pump has a man in charge, to whom is entrusted the drainage of about 100 acres of land, and by his house is a marked gauge showing the level at which the water is to be kept according to the season. Coming back, our friend tells us much respecting this wonderful drainage, of how when they get short of water, in the summer the sluices are opened from the river, and the ditches filled with water from the old Rhine; of how last winter during a stormy night the sea-bank threatened to give way, and the alarm bells rang all night in the town of Leyden, which is 8 feet below sea-level; more about pile-driving, and the new railway station at Amsterdam, which is built on piles 120 feet long. But interesting as all this is, we must say adieu and hurry on, or we shall never reach the Tulips we want to see. True we have seen plenty of Tulips already to-day, but we are going now to the home of the Tulip.

We mount once more into the steam tram, and whilst it takes us to our destination (perhaps, by the way, it does not go there direct, but no matter) we will just make notes on what we have seen. The first thing that strikes an observer, after a careful inspection of a Hyacinth field, is the number of varieties which are second rate and inferior to others growing around them. If the observer has an inquiring mind he will ask as I did on my first visit to Holland, "Why do you grow this and that when others are so much better?" The answer came, "Were they not in your catalogue last year? Just so, and there are numbers of people who year by year order varieties which are long out of date, and superseded by newer ones; the only other reason they are grown is that they are cheap." Having then marked the second-rate names off, we make notes of the good stocks we have seen, as we have done at other places, not forgetting those Queen of the Blues measured yesterday in the fields, with spikes 8 inches long. Time was when the few men who exported bulbs grew each their own speciality, and purchased the specialties of others. There are so many exporters that they are jealous of each other, and each man tries to grow and sell everything. The Hyacinth man grows Tulips, and the Tulip man tries to grow Hyacinths; so if you wish to have really the best of everything you must buy largely, so as to make it worth while to get the best each man has. Some who come to England for orders have little ground of their own. They buy up what they want at the auctions, for thousands of people grow bulbs and sell them by auction who are not in the trade at all, just as Lincolnshire farmers grow Turnip seed. Where do all these little half-starved bulbs go to that we see in every cottage garden, in the railway porter's garden alongside the line and elsewhere? Probably, like the Potatoes, to England. Certain it is that with such a demand for Tulips as there was last season, when all the best growers were sold out almost before the season began (at fancy prices), they would never send their bulbs over for sale by auction, and yet there were plenty to be bought much under wholesale prices. Are all the Dutch growers who sell retail in England connected with the best houses here? Certainly not; a man like our friend we have just left would not accept a retail order; he would not attempt to do both trades. Some who advertise as retail traders are much in the position of merchants. So far as what they grow themselves is concerned they have the advantage of saving an intermediate profit, but they cannot grow all they require, and if they

attempt to do so they simply arrive at a very second-rate all-round produce. For what they want to buy they are very much worse off than the merchant, for the best growers prefer to supply their English customers who come regularly, rather than to trade with Dutch retailers. When you take into consideration the fact that the merchant saves very much by importing in large quantities instead of paying carriage on small retail lots, you can readily see how it is that he can, if he understands his business, compete on favourable terms with his Dutch rival.

I do not think our tram has had anything like time to reach its destination whilst we have been making our notes, but we must anticipate, for time flies. As we look out of the window we see the country has changed during the last few miles (our tram runs about twelve miles an hour including stoppages, so we are getting over the ground). We have left the pleasant flat meadows which seem so full of cattle that one wonders where they go for a change of pasture, and we now find the soil getting stiffer and principally arable; to speak correctly, it is principally under the spade, and really some of it seems as if there were enough men employed upon it to ruin anyone. Look at those seven men digging on that narrow strip for Potatoes, and women planting after them; one would think their wages would purchase the crop, and if you look all around the land seems all over men. These towns we see here, which are only four or five miles apart, are almost wholly agricultural, but then, you see, there are no scattered houses as with us. Everyone lives in villages or small towns, and the men and women walk backwards and forwards to their work. In our own fen country it is much the same, and probably in a country which is at any time liable to be inundated by the bursting of a bank, it is safer to live together than scattered in old houses. Looking out we see here a field of Strawberries and there a field of which you cannot guess the crop! No, it is Roses; they are grown in long lines of cut-down bushes, and the flowers are picked for Paris perfumers.

Now look out of the window behind; the sun is shining his best, and what a glare he shines upon—a crimson sea! Yes, those are Scarlet Van Thols, and as nearly as I can guess there are three acres of them. A little further and our host meets us. Let us leave our overcoats, which have not been of much use to us to-day, and make a start. Of course, as this is the home of the Tulip, our host is very anxious to show us his Hyacinths. We have seen such numbers of Hyacinths that we do not care to see more, but we wander on, and see acres of Hyacinths old and young, and really the stock of one or two sorts is very fine, notably the Giganteas. After seeing the Hyacinths, we cross the road and come to some Narcissus, a very fine lot of Golden Spur, and some good beds of Horsefieldi. Then we come to some Tulips set out in pieces of about half an acre each. What a sight! I never saw such Keizers Kroon; they are immense. As you stand over them they are fully expanded, and the blooms hide the whole ground, not as you see them in some of our parks like plums in a sailor's pudding, but set out 4 inches apart every way. Then we see acres of La Reine, principally grown for the London and Berlin market growers. By the way the Scarlet Van Thols we saw as we were coming were evidently part of a farmer's property. What becomes of them all? Our host tells us that one London market grower uses half a million annually of this one variety, and it is not at all uncommon to have an order for £200 or £300 worth of Tulips from one grower. These market orders are very useful, for they take the rough bulbs that the merchant would refuse. They bloom as well as the others, but are not so clean and pretty for retail work. Of course the market grower has them cheaper, and now I understand what I never did before—viz., how it was possible to bloom bulbs for sale at a profit. The ill-shaped Hyacinth bulbs are mostly sold to Germany for the same purpose. The Germans are very fond of forced Hyacinths, and they do very well for the immense cart-wheel bouquets they make up. In our English markets there is little demand for them.

We walk on. Another acre, this time brilliant with yellow Chrysolora, then a piece of that lovely silky carmine Proserpine, which one can distinguish as far as one can see it; then pieces of Van der Neer, Cardinal's Hat, Yellow Prince, Duchesse de Parma, Joost von Vondel, various Van Thols, Pottelbakkers, and others too numerous to mention. The doubles are hardly out, but if I should see another year I intend to come a week later, and have a full Tulip treat. Meanwhile, in passing we must stop at this bed with variegated foliage. They are really beautiful, quite as handsome as variegated Yuccas. What a talk they would make in Nottingham arboretum just as they are here. This variety is rather expensive yet, but the variegated Purple Crown is an excellent variety and cheap. Some of the variegated sorts are not much good. Strangely enough some do not produce flowers when the leaves are variegated, and as soon as they bloom the foliage assumes its normal hue.

Leaving the Tulips, we come to a fence of wire netting and a shelter hedge made of reed. Behind the latter we find beds of *Lilium lancifolium album* and *roscum*. The wire is to keep the hares from the Crocus, of which we find an acre or so of Mont Blanc (the finest of whites), and others in smaller plots. A short walk takes us to another nursery, where we find a number of *Polyanthos Narcissus* just coming into bloom. What a grand lot of Bazelman major! How strong and what blooms! This variety, which is undoubtedly the finest grown, is unfortunately bad to propagate, and the stocks are small and very scarce. Does it strike you that the foliage is scorched and sickly? That is the effects of the frost, and one but rarely sees the beds in Holland when the leaves have not been caught by spring frost. The blooms are often lovely, but they seem to be too happy compared with their blighted leaves. I feel sure from this that one need not try to grow the

Polyanthus Narciss out of doors in England, its place is in the conservatory. You and I find the utmost difficulty in distinguishing more than six or seven varieties of Polyanthus Narcissus. Yes, and so I believe do the growers. They tell you that these two are just alike except the hulbs, which vary a little. The fact is two are catalogued, and people ask for them. The grower has years ago chosen the better of the two, and sells it for both. On our way back we pass acres of small Tulips, and as we approach the large canal we see a huge field covered with that tender russet brown which denotes the young growth of *Spiræa japonica*, or, as the Dutch call them, Hoteia. There are scores of acres grown on the heavier and damper land which will not grow hulbs. Our host could show us much more if we would stay, but we have been walking three hours with him, and now the day is declining, and we have a long ride before we get back to our dinner. Of course we must smoke a cigar with him, and drink a little glass, for the Dutchman is the soul of hospitality, and would be quite hurt if you did not take something with him.

I always find myself quite at home in the Netherlands—the people, the manners, the cleanliness all seem to remind us of home; everything except the language, and that is fairly easy for a Scotchman. Everything did I say? No, I must make an exception. One rarely sees a beggar, and abject poverty is almost unknown. True, there are not so many millionaires, but the towns are smaller, and people do not get lost as they do in our fearful metropolis, and either starve, or what is almost worse, work for such wages as starve themselves, whilst they take employment from others. The working man in the Netherlands keeps long hours—*i.e.*, in the summer. I suppose he cannot do much in the winter, but he seems contented. His sabots or wooden shoes cost him 6d. a pair, perhaps 10d. if he is stylish. They keep his feet dry and warm in winter, as I can testify, having worn them myself, and in the summer he can keep his feet cool, or fairly cool, walking in the hot sand, whereas in boots one feels the heat very much.

I have been particularly struck on the bulb farms with the appearance of politeness and goodwill displayed between employers and employed, and I know that a good feeling exists, for when I ask a large grower, "What do you do with your men in the winter?" he replies, "Oh, there is always something; they must live in the winter as well as the summer." In making this remark I would not draw any contrast between Dutchmen and our own people, for if an employer cannot get on with English workmen it is generally his own fault. I have been moralising some time, but have not been keeping our host waiting, for we bade him good-bye some time ago, and are rolling along in the steam tram towards our well-earned meal and repose.



ROSES ON THEIR OWN ROOTS.

WHILE thoroughly endorsing all that "Utilitarian" (page 82) says in favour of raising Roses on their own roots, it might be well to give another system of attaining the same end. It gives an additional chance to those who have not availed themselves of the way recommended by him, and who might still wish to put in a few cuttings this autumn, for which there is still ample time, for November is as good a time as any for this operation. As a frame is not required the system has the advantage of great simplicity, and when properly done will ensure a strike of about 80 per cent. at least. Select a shady border, under a north wall for instance, so long as it is free from draught. If the soil is of a tenacious nature it is well to fork-in a quantity of leaf soil and sand, but if moderately free or sandy this will not be necessary. When the ground is ready set the line. Take out a narrow space with the spade about 7 inches deep, cast a little sand along the bottom, and insert the cuttings about 6 inches apart, and a foot between the lines. Tread the soil firmly when filling up the lines, and leave the ground level. When finished spread about an inch of sand over the surface, and by the following November there will be quite a forest of Roses, fit to be removed to their permanent quarters.

As to the cuttings I always make them from 12 to 15 inches in length and of medium wood, if with a heel so much the better. It will therefore be seen that they are about half in and half out of the ground. As Mr. David Thomson said in a January number of this Journal, they will continue to grow and throw up fresh shoots like Osiers when generations of Briar-worked Roses have passed away. It may surprise many to know that tender Tea and China Roses may be propagated in this way, while such as *Gloire de Dijon*, *Rêve d'Or*, and others similar to these root more freely than the Hybrid Perpetuals.

About the middle of last November I had a mixed lot potted that had been put in exactly twelve months before, and in April they bloomed as well as the older Briar-worked ones, and better in some instances, as the blooms of *Magna Charta* would not have looked out of place on an exhibition table. At the same time I remember when I first began this way of propagating Roses some sixteen years ago I potted a number, and top-dressed them heavily with hen dung in spring. They

grew well and bloomed magnificently, but lacked the Rose's greatest charm—they were totally without scent, while the older established ones treated the same way were all right. It is needless to say I have never resorted to a similar top-dressing until the second year at least.—H. C. W.

A ROSARIAN'S INVENTION.

ON Saturday afternoon last the whole of the officers and Committee of the Preston Fulwood Horticultural Society were entertained at luncheon in a large marquee, erected for the purpose upon the lawn at the residence of Mr. Samuel H. Stott, Linden House, Fulwood, Preston. This gentleman is an expert in Rose culture, and is a frequent visitor at some of the principal exhibitions. He has a large collection of all the most popular varieties, and for many months past has been engaged in his leisure hours by an endeavour to invent a scheme by which insecticides and manures might be distributed for both cleansing and feeding purposes. Mr. Stott's endeavour has proved successful, as was shown at the various trials of insecticides and manures which the members, numbering over forty, were invited to witness.

The distributor is a vessel made of either zinc or iron sheeting, in the shape of an ordinary 4 or 6-inch hot water pipe, with two divisions causing three or more cells. At either end a hosepipe is attached, the latter being fixed to the water supply of the house, or from any other source from which there is a downward course in the direction of the distributor. With the water connected, all that remains to be done is to put the desired insecticide soap or manures into the cells. The water now turned on passes through the instrument. The water in passing through dissolves and carries with it the properties of the soap or otherwise, which are distributed by a man at the hose in the same way as clean water would be put on from any water supply in the ordinary way. The strength is regulated by filling one, two, or more of the cells, according to the requirements.—A. W.

THE ENGLISH ARBORICULTURAL SOCIETY.

A VISIT TO ALNWICK CASTLE.

THE fifth annual excursion of the English Arboricultural Society took place on Wednesday, September 18th, the place chosen being Alnwick Castle, permission having been kindly given by His Grace the Duke of Northumberland. It was a lovely September day, the sun shining brightly, cheerful, and yet not too warm, adding considerably to the pleasure of the visitors. The party met and breakfasted at the Crown Hotel, Newcastle, and left by the 8.20 train for Alnwick, where they arrived at about 10 A.M. They were met by the head forester, Mr. J. D. Coxon, who conducted them to the gardens, when they were met by the gardener, Mr. Geo. Harris. On entering the visitors were much struck with mixed beds, which had a most pleasing and telling effect. The large conservatory or winter garden, which is 120 feet long, 60 feet broad, and 30 feet high, was visited, and well repaid the trouble. All the usual greenhouse plants were doing well, but the great feature was the climbers round the posts which support the large roof. *Lapageria alba* was 25 feet high, flowering most profusely. Mr. Harris never entwines the shoots, which causes them to fall in graceful festoons, and the large clusters of white flowers are seen to much better advantage. *Lueulia gratissima* is showing over 100 heads of flowers, and even the laterals are all showing flowers. *Fuchsia Carolinae* has grown 35 feet in four years, and was profusely draped with flowers from top to bottom, and the charming *Clianthus puniceus* is also in a very flourishing condition, and is likely to flower well in February. There is also the rare *Bignonia Chirire*, which has the remarkable character that in its early stages of growth the leaves are small, but as the growths develop the leaves increase proportionately. There is also *Tacsonia Von Volxemi* and *Solanum jasminoides*. In this conservatory were some plants of *Chrysanthemum G. Vermig*, which was splendid both inside and out. Mr. Harris considers it invaluable.

We next entered the vineries. A range of about 120 feet divided into three compartments. These were planted some fifty years ago at considerable expense, the borders extended, and from 4 to 5 feet deep. This depth of rich soil is considered by our guide far too much; 2 feet 6 inches is ample, and artificial food can be employed better and safer to them under these conditions. These Vine borders are gradually being restored. By noting carefully the northern climate here it is found that all the thick-skinned Grapes are six to seven weeks later than the thin-skinned ones, and it is advocated that all late Grapes be started by the first week in March, and Muscat of Alexandria on no account later. The favourite late Grape is Mrs. Pince, then Trebbiano, Lady Downe's, and Pearson's Golden Queen. The bunches averaged from 2 to 3 lbs. each, were large in berry, and likely to finish off very well. On emerging from this range our attention was drawn to some fine horizontal trained Pears of *Beurré Clairgeau*, a good cropper, and a much esteemed Pear in the ducal kitchen. *Beurré Diel* was good, and Louise Bonne of Jersey had an excellent crop. In the borders worthy of note were Roses flowering from the second growth. The principal varieties were *La France*, *Gloire de Dijon*, and *Souvenir de la Malmaison*, the latter is often seen good in the north very late. We again entered two fine Muscat of Alexandria houses planted in 1885. These houses are 30 feet long, 18 broad, and 16 feet high at the apex. Fine new hay was spread all over the borders inside to stop the ascending moisture, and removing the hay the borders were seen to be quite damp under-

neath, and yet no moisture seemed visible in the house. These were started the second week in March; they are just now finishing, and are faultless in colour, size of berry, and bunch. The bunches average 3 to 4 lbs. each, are a heavy crop, and regular all over the house. The usual Vine soil was used with Ville's manure, and each year about 2 lbs. to the square yard is allowed as a top-dressing. The growths of the wood were splendid; joints of the shoots were only from 4 to 4½ inches apart.

The pinetum is known to the many readers of the Journal to be very extensive, and was very interesting to the visitors. Notable were *Abies Veitchi*, *Cedrus Deodora*, *Abies nobilis* and *Douglasi*, the latter not so good where it has caught the winds; *Picea monticola* and *Thuja plicata*. A fine plant of *Abies Englemanni glauca* was pointed out, some contending it was *Parryi*; however, they all agreed the latter was the harder. *Abies grandis* was pointed out to be the hardest becoming tree for glens and dales, while it was stated that *Abies Douglasi* would fast take the place of the Silver Fir as a timber tree, it makes as much as 3 to 4 feet in one year. In the kitchen garden were some fine Cauliflowers, Early London planted 15 inches apart, as they are cut in a small state by the thousand. King of the Cauliflowers is also a great favourite, and London Rosette Coleworts were also planted in thousands after Potatoes. Some fine late Pears of Hacon's Incomparable, which comes in December and January, were noted here; it is a great favourite. Marie Louise and Glou Morceau were also spoken of highly.

From the top tier is observed a fine view of the flower garden, terrace, glass houses, &c., which were all fully described by Mr. L. Castle two years ago. This fine flower garden was designed by the present Duke, and contains his coats of arms worked in crescent shape. We may here mention the promenade round the tennis court. This is an agreeable shady resort. It is planted with Lime trees about 9 feet apart and about 14 feet broad, these have been trained over some wirework about 11 feet high: the whole work has been very successful. In another portion of the kitchen garden, and were pointed out some magnificent Onions, spring planted, of Rousham Hero; the size much astonished the visitors. The secret of success was not kept back; it was by raising them in a frame and pricking out early. This is a hint that kitchen gardeners would do well in the cold north to take note of. Mr. Harris pointed out that through another hint in a recent article by Mr. J. Wright on Apples, that he had procured about a dozen trees of Domino Apple, which he was of opinion as a kitchen Apple would prove an undoubted success at Alnwick. It is rather like Ecklinville Apple, except the eye, and a small tree had eleven fine fruits. Peas were doing well planted 15 to 16 feet apart from each other. Veitch's Perfection and Ne Plus Ultra were especial favourites; amongst newer varieties Duke of St. Albans was also a favourite. As our time was short we had to take a reluctant leave of Mr. Harris.

The party next proceeded to the Abbey grounds by way of Forest Gate, under the guidance of Mr. J. D. Coxon. There is much to interest the historian at Alnwick, and we may just state that before entering the park we observed the place where William the Lion was taken prisoner in besieging Alnwick Castle in 1174. The Stocking Drive contains many fine specimens of trees, a *Wellingtonia gigantea* 45 feet high and 13½ inches quarter girth attracted much attention; the *Abies nigra* was 30 feet, and some *Abies nobilis*, 38 feet, were also observed; *Pinus Cembra*, 45 feet high, 10½ inches quarter girth, 4 feet up; *Thuja gigantea*, a fine *Liriodendron Tulipiferum*, and *Ailantus glandulosa*, 41 feet high, commonly called Tree of Heaven; a fine *Abies Douglasi*, 63 feet high, and at 5 feet 9½ quarter tree. This tree was only planted twenty years ago. Crossing the Aln over a graceful suspension bridge a fine view of the castle is obtained. Here are some fine specimen *Abies Douglasi*, and a *Betula alba pendula* attracted general attention, which was about 60 to 70 feet, and 5 feet from the ground 17½ inches quarter girth. On ascending a hill well above the Aln a fine view of the historic abbeys, Alnwick and Hulne, were obtained. The landscape here is a charming combination of woodland dale and valley, watered in tortuous and winding courses by the rippling Aln. Hulne Abbey was a Carmelite monastery, it is said, and owes its name to the hill having a strong resemblance to Mount Carmel. It is supposed to have been built in 1240 by one Ralph Fresborn, and the ground given by William de Vesey. Alnwick Abbey was founded about 1147 for a colony of Premonstratensian canons. The foundations are large, and were lately excavated by the present duke so as to show the lines of the foundations, and these are clearly defined in gravel. There is also a flagstaff pole over 100 feet high, that was, it is said, even higher, and was a Vancouver Pine given to a former member of the ducal family. From there we proceeded to what is called the Far Stocking Park Dene, where there are some fine Larches, one 28½ inches girth at 5 feet from the ground, 100 feet high, containing about 250 cubic feet of wood, was planted about 140 years ago, and for ready money in the market would yield about £16. From there we come to what is termed Brissle Tower. This was built by Hugh, the first duke. It is built in the pseudo-Gothic style in the year 1781. Many fine trees were blown down in 1881. The view is of the most charming description, the Cheviot Hills and many other objects of historic interest can readily be seen on a fine day.

By way of Dingle Drive and Catreugh Wood we proceeded to Hulne Abbey, already mentioned, passing by the Lady's Well, a spring of pure water. A short distance from here is the Trysting Tree, a gnarled and venerable Oak, very hollow and much decayed. It is known to have been a great tree in 1624. A little to the east of the Lady's Well are

several fine specimens of the Silver Fir, some of which reach a height of from 108 to 114 feet. The girth of the tallest is, at 5 feet from the ground, 14 feet 6 inches. A little further east still is an *Abies Douglasi*, over 100 feet high. Several of the Silver Firs contain about 400 feet of wood, and some sold in 1876 contained 576 feet. In the fine old ruins of Hulne Abbey are several Service or White Beam trees, and here again occurred an interesting discussion, Mr. Brown of Hexham contending that they were not synonymous terms, but that the Service Tree was more serrated in the leaf, which opinion was generally supported.

The party drove back to Alnwick, as dinner was to be ready at four o'clock, which was served in good style at the White Swan Hotel, Alnwick. The usual toasts were proposed, and Mr. Wilson, Leazes Park, Newcastle, was presented with the bronze medal of the Society for an essay "For Suitable Trees for Various Soils and Climates." The chair was occupied by Mr. T. Dodds, Eilan's Gates, Hexham, and the vice-chair by Mr. Isaac Batty, of the same place. The following were present:—Mr. J. Davidson, Sec. and Treasurer, Haydon Bridge; Mr. Wm. Fell, Mr. Wm. Milne, and Mr. Brown, all of Messrs. Wm. Fell and Co., Hexham; Mr. John Balden, jun., and Mr. John Balden, sen., Dilston; Mr. Luke, Greenshaw Plain; Mr. J. Scott, Newton Hall; Mr. Ralph Shipley, Plunderheath; Mr. Clark, Blenkinsopp Castle; Mr. Thos. Vasey, land agent, South Shields; Mr. D. Smith, Scremerston; Mr. and Mrs. Graham, Findon Cottage, Durham; Mr. J. Wilson, Leazes Park, Newcastle; Mr. H. T. Crook, Manchester; Mr. J. Robinson, Burnopfield; Mr. Bernard Cowan, South Shields; Rev. W. Johnson, F.R.S., Gateshead; Mr. W. Taylor, of Little & Ballantyne's, Carlisle; Mr. Gallie, forester, Ravensworth Castle; County Councillor Davidson, South Shields; Mr. Geo. Cooper, Superintendent Gateshead Cemetery, Gateshead; and Mr. Jos. D. Coxon, forester to His Grace the Duke of Northumberland. The latter gentleman proved a good and constant guide all day from 11.30, and had it not been for that gentleman's tact the visitors would not have seen so much of the fine woods in the short time they were there. Several new members were proposed, and all parted highly pleased with the day's proceedings. The fine weather they experienced, and the pleasure enjoyed in visiting the Duke of Northumberland's stately domains will be long remembered.—BERNARD COWAN.



HARDY FRUIT GARDEN.

GATHERING APPLES.—This in most cases will not be a laborious undertaking, but if there is a scarcity of fruit there is a greater necessity to take extra care of the fruit. In many gardens the tits and blackbirds have been most destructive among the fruit, and it was a case of gathering early or having none to store. As a rule, however, it is unwise to gather the fruit before it parts freely from the branches, or until the seeds are nearly brown. If these tests are not applied, the Apples being dragged from the trees, the chances are the greater portion will shrivel prematurely. This applies to all varieties, whether early or late, but it is of the greatest importance that the keeping sorts be the most carefully tested prior to gathering.

STORING APPLES.—Whether the fruit will keep well or not, much depends upon the way in which they are stored, the quality or flavour being also quickly impaired under certain conditions. Many of the modern fruit rooms are light and airy, latticed shelves being provided for Apples as well as for Pears, but it does not follow that the fruit of the former will keep any better or even so well under this presumably favourable treatment than it did formerly in more makeshift quarters. The simple methods of storing sometimes adopted by those in charge of comparatively small places are sometimes the best. Apples keep admirably in clean sweet boxes or casks, and also in hampers lined with paper, these being stored in dry cool lofts or rooms, and not interfered with till required for use. It is of the greatest importance that only quite sound fruit be stored in this manner, as one decaying fruit in the lower portion of the mass will soon infect the others. Sound Apples will keep surprisingly well in such positions, and also when stored in heaps in a cool dark room, or even in the open and protected with clean straw, or much as Potatoes are clamped. In the case of dessert fruit especially sweet surroundings are of the greatest importance. Apples being of a soft porous nature soon absorb any effluvia to which they are subjected, and for this reason ought not to come into contact with musty hay or straw, nor be confined in an impure atmosphere, such, for instance, as pervades a disused Mushroom house. The shelves or floors should be lined with nothing but clean kitchen paper, as quite fresh straw or hay eventually becomes musty, and imparts an objectionable flavour to the fruit. Boarded floors ought especially to be covered with paper, this effectually excluding cold air draughts, and paper coverings freely used will protect sufficiently in frosty weather. If the fruit is stored in a well heated fruit room, fire heat should be turned on sparingly, or only sufficiently to prevent a very low temperature being reached, or otherwise premature shrivelling will inevitably result.

APPLES THAT KEEP WELL.—Good keeping Apples are of the greatest value, and it ought to be almost unnecessary to point out how unwise it is to use them in a reckless manner or long before they have attained perfection. Only those that will not keep, this including any that are damaged in any way, ought to be used now, the rest being kept as much as possible till their proper season has arrived. By way of a guide to the inexperienced it is advisable to mention a few of the most popular late or semi-late Apples, adding their time of maturity or when they are fit for use, beginning with culinary varieties. Stirling Castle and Nonesuch are in season up to the end of October; Emperor Alexander, Golden Noble, Waltham Abbey Seedling from September to December; Cox's Pomona and Cellini during October, and sometimes till the middle of November; Hawthornden frequently keeps good to December; Ecklinville Seedling, Flower of Kent, Hollandbury, Kentish Pippin, and Mère de Ménage are available from October to January; Beauty of Kent, Lady Henniker, Kentish Fillbasket, and Winter Hawthornden are at their best from October to February; Blenheim Pippin, Fearn's Pippin, Tower of Glamis, from November to February; Dumelow's Seedling, Royal Somerset, and Warner's King from November to March, and sometimes even later; London Pippin, Alfriston, Winter Greening, and Norfolk Stone Pippin from November to May; Dredge's Fame, Hanwell Souring, and Winter Pearmain from December to March; and Winter Majetin, Hambledon Deux Ans, and Norfolk Beefing will frequently keep good to June. Dessert Apples are even more scarce than culinary varieties this season. Of these Early Nonpareil and Gravenstein are good from October to December; Cornish Aromatic and Golden Winter Pearmain October to January; Cox's Orange Pippin, Court of Wiek, and Mannington's Pearmain October to March; Downton Pippin, Ross Nonpareil, Margil, and Sam Young, November to February; Claygate Pearmain, Golden Pippin, Braddick's Nonpareil, and Golden Rennet, November to April; Adams' Pearmain, Rosemary Russet, and Melon, December to February; Golden Knob and Ribston Pippin, December to March; Newtown Pippin, Cornish Gilliflower, Court Pendu Plat, Lord Burghley, and Northern Spy, December to May; Cockle's Pippin, Scarlet Nonpareil, and Duke of Devonshire, January to May; and Sturmer Pippin February to June, the months named being inclusive in every instance.

GATHERING AND STORING PEARS.—Much that has been advanced regarding the time to gather Apples also applies to Pears. It is a very great mistake to drag these from the trees, this being especially the case with Glou Morceau, Beurré Rance, Easter Beurré, Huyshe's Prince of Wales, Chaumontel, Beurré Bachelier, Beurré d'Aremburg, Josephine de Malines, Bergamotte Esperen, Nec Plus Meuris, Olivier de Serres, and Madame Millet, all of which if not gathered too soon or not before they part freely from the trees when carefully raised out of their natural position, will keep late, and as a rule ripen satisfactorily. Gathered too soon they shrivel badly, and never attain perfection. In any case it is useless to attempt keeping fruit recently damaged by birds, and these may well therefore be sent in for stewing purposes. Very small holes pecked near the footstalks by tits some time since, and which have healed over, will sometimes keep fairly well, especially if the air is excluded from the wounds. Sealing wax dropped into these, or even a small piece of gummed paper such as frequently accompanies postage stamps duly plastered over, will frequently tend to preserve these slightly damaged fruits, which are too plentiful this season. Pears, unlike Apples, do not as a rule keep long after they are ripe, and it is not advisable therefore to store these in boxes, hampers, or heaps. The better plan is to place them in a single layer, stalk end uppermost, on clean benches or latticed shelves in a dry but not very airy room, where they can be frequently examined.

FRUIT FORCING.

PINES.—To maintain the sturdy, healthful appearance of young growing Pines, free ventilation is necessary, keeping the bottom heat about the roots at 80°, watering the plants whenever they require it, employing weak liquid manure occasionally, and avoiding the use of the syringe too frequently; merely sprinkling the paths, &c., morning and evening daily will suffice. Fire heat must be resorted to maintain a night temperature of 60° to 65°. Let newly potted plants have a bottom heat of 90° to 95°. Recently started suckers, as soon as roots are plentiful, can be raised near the glass, those intended to be watered in small pots being brought on gradually. Fruiting plants must have a night temperature of 70°; 80° to 90° during the day, closing at 85°.

When the suckers started this autumn are rooted, pot them without delay, draining the pots well. Employ the fibry part of turfy loam, and do not tear it up too fine, but use it in lumps proportionate to the size of the pots. The strongest plants may be transferred to the largest pots at once, the size being proportionate to the habit of the varieties. Jamaicas do well in 9 or 10 inch pots; Queens in 10 or 11 inch pots; Smooth-leaved Cayennes and similar varieties in 11 to 12 inch pots; and Providence in 12 to 13 inch pots, which will afford fruit of the largest size. Where smaller plants and fruit are required pots an inch or two less in diameter will answer. The plants that are not now fit for transferring to the largest can be shifted into 8 inch pots, in which they may be kept until spring, and then be transferred to a larger size.

CUCUMBERS.—The autumn fruiters must have careful attention, affording copious supplies of liquid manure, removing superfluous male blossoms and tendrils, avoiding overcropping, and not allowing the fruit to hang too long. Syringe only at closing time on bright afternoons. Earth up the roots as the plants advance in growth, from time to time.

Pinch out the growing point one or two joints beyond the fruit, examining the plants at least once a week for that purpose, retaining no more foliage than can be fully exposed to light. All water must be given at the same temperature as that of the roots.

Pot the plants from seed sown at the beginning of September for winter fruiting directly they are large enough, plunging the pots in bottom heat until the plants are established, then raise them near the glass, maintaining a temperature of 70° at night, 75° by day, with an advance from sun heat of 10° to 15°. The fermenting materials, if such are used for bottom heat, must be in preparation for the formation of the beds in due time. For producing a good supply of fruit in the late winter and early spring months sow seed at the beginning of October. Where the "disease" prevails it is a good plan to make frequent sowings, so that the succession may be better assured.

Plants in dung-heated frames or pits must have the linings renewed as required, the foliage being kept thin, the shoots stopped to a joint beyond the show of fruit, and no more water given than to secure healthy moisture for the roots, placing mats over the lights on cold nights.

STRAWBERRIES IN POTS.—A loose surface for Strawberries in pots prevents the soil leaving the sides of the pots, and admits of the water passing equally through the ball, and moistening it thoroughly. A little dried horse droppings or cowdung rubbed through a sieve applied to the surface will keep all right there. Remove all runners as they appear, also weeds, and do not allow the plants to suffer through insufficient supplies of water. The plants must have full exposure to light and air, allowing them plenty of space, to ensure sturdy growth and plump well-developed crowns. In the varieties required for early forcing, such as Noble, La Grosse Suerée, and Vicomtesse Hericart de Thury the crowns are plumping well, and the plants may, when required for early work, be plunged in ashes in cold frames, keeping them well up to the glass, the lights being withdrawn in all mild weather, only employing them in case of heavy rains, when they can be lifted or closed if frost prevails. As a first early we give preference to Noble, but we start along with it plants of La Grosse Sucrée and Vicomtesse Hericart de Thury, for Noble, though large, free in setting and swelling, has a colour which some do not like, and the flavour does not please all palates. La Grosse Sucrée is bright in colour, as well as large and free, with unquestionable quality; Vicomtesse Hericart de Thury sets and swells freely, and the quality pleases everybody—indeed, it is the very best flavoured of useful early Strawberries. We follow with Sir Joseph Paxton and President, both of which are in every respect excellent, and close with Sir Charles Napier, perhaps the most taking in appearance of all Strawberries; Auguste Nicaise and Unser Fritz, which are noble in size, and good in colour and quality, lead up to the finish and high quality of Dr. Hogg. In those we find everything desirable in forced Strawberries, also for outdoors, with the addition of Oxonian (syn. Eleanor). We have also a few King of the Earlies, which is readily forced, and though the fruit is small it is esteemed for jellies.

The autumn fruiters, if any are grown, should be encouraged with liquid manure—weak guano water or sulphate of ammonia, 1 oz. of the first and half an ounce of the latter to a gallon of water, and in the case of heavy rains and the fruit approaching maturity, the plants being placed in frames with abundant ventilation, which will improve the quality and colour considerably. Sir Harry as an abundant fruiter is unequalled, La Grosse Suerée is good, also Vicomtesse Hericart de Thury. Noble, though we have kept the forced plants, does not present any tendency to produce an autumn crop of fruit, but it has one prevailing characteristic which we have not noticed in any other variety—viz., the runners of forced plants push trusses of bloom after they become established in the small pots in which they are layered, or even when not layered, the smallest runners invariably throw a corresponding truss of bloom. Plants of the approved varieties that have been forced in spring, shaken out, repotted, and grown on are excellent for autumn and early winter fruiting, or if planted out and duly attended to they can be lifted at the end of September or early October, potted, and placed in a cold frame. Any autumn fruiters not required to fruit for some time yet may be retarded by placing them on a north border.

KITCHEN GARDEN.

CLEANING.—Winter is fast approaching. There are indications of it being unusually early, and all vegetable gardens will be much benefited by being thoroughly cleaned before they are saturated with moisture. Do not allow decaying vegetables to remain where they are growing, but place them in a heap to decay for manure. Clear all decayed leaves to the same heap, and above all remove the weeds that are producing seed.

STORING ROOTS.—Roots of all kinds should now be stored. The whole of the late Potato crop must be stored as soon as possible. The longer they are left the more difficult it is to dry them, and this is an important point, as when the tubers have to be dealt with in a wet state they are sure to deteriorate. Onions should now be in their winter quarters, and if Carrots and Beetroot are full grown they may be lifted and stored. They keep best in a place neither very dry nor very damp, the atmosphere of an ordinary shed will suit them as a rule. Beetroot must be carefully handled to prevent damage, and all roots keep better if not bruised. Those who have to send a large supply of vegetables to the kitchen every day during the winter know that roots form an important item in the demand, and the utmost attention should be given to insure the supply.

MUSTARD AND CRESS.—With us more of this is used in the kitchen than in the pantry, and the demand for it comes almost daily. Since April we have been growing it in the open air, but now it is too cold to do this, and it must be sown under glass. One of the best ways we have yet tried is to make up a gentle but firm hotbed, place a frame on this, fill it half way with any old rich soil, and sow the seed on the surface. A bed formed for the purpose now will produce crop after crop for two months or more, and it does not require more than three successional beds to keep up a supply throughout the winter.

PESTS AND YOUNG PLANTS.—We find slugs, snails, and other pests very plentiful this autumn. They soon injure and disfigure the young Cabbage Lettuces and other plants, and if not checked they will destroy them. A little lime or soot shaken over and around the plants once or twice weekly is a profitable practice, and may be continued until the plants have attained some size or become so hardy that the pests are less partial to them. If the soil is dry on the surface the Dutch hoe may also be run between the rows weekly with advantage.

ASPARAGUS.—The success of this if forced or left in the beds for next spring depends greatly on the manner the crowns are matured. If thoroughly ripened they will produce many good heads, although the roots are not of the best, and the surface of the beds should be cleared of weeds. If the stems are shading each other tie them up and do not remove any that are attached to the roots until they have become quite brown.

KIDNEY BEANS.—In the spring with proper appliances dwarf Kidney Beans will gain maturity in eight or nine weeks after sowing the seed, but at this season they will take twelve weeks or more, and those who wish to gather at Christmas and December should sow a quantity of Ne Plus Ultra seed at once in 3-inch pots and grow the plants in a gentle heat and plenty of light.

EARTHING UP CELERY.—The parts of Celery that are exposed when frost occurs often suffer, become soft, and will not keep well afterwards. It is therefore desirable that all Celery should be carefully earthed as far as possible without covering the stems above the centre, which may cause this to decay prematurely. One should hold the plants together and press the soil close to the stem while another pushes the soil forward with the spade; and after the whole has been done in this way tread the ridges all over very firmly so as to cause them to throw off the wet.

EARLY RHUBARB FOR FORCING.—Some of the Rhubarb crowns have nearly thrown off all their leaves, and the most advanced in this respect may be completely cleared to expose the crowns fully, and thereby prepare them for the first forcing a few weeks hence.

VEGETABLE MARROWS.—These are easily injured by frost, and a few degrees will render the plants useless. It will also affect the fruit in such a manner that they will not keep for any length of time afterwards, and as all the fruits that are young and tender now may be kept for several weeks after being cut, if secured in good condition, every one of them in this state should be taken in at once. If yellow and hard they will not be good for cooking, but anything short of this will prove useful. By putting them in a piece of net and hanging them up in the kitchen they may be kept in good condition until Christmas or later.

Do not allow winter Radishes to become crowded; keep the young Cauliflower plants hardy as long as possible by exposure; Lettuces that are of full size may be kept useful for a considerable time by lifting them with a ball of soil to the roots and placing them in a cold frame. The check received in lifting prevents their bolting. Cut and store Cauliflowers, and do not allow anything to remain exposed that is apt to be injured by frost.

PLANT HOUSES.

Poinsettias.—Be careful not to excite these plants into fresh growth. This often takes place after they are removed from cold frames by maintaining too light a temperature and too close an atmosphere. Air may be admitted liberally on all fine days, but be careful to avoid cold draughts. Employ fire heat to maintain a night temperature of 55° to 60°. Water the plants with care, and use for them water slightly warmer than the temperature of the house. Euphorbias, Linums, Plumbagos, Justicias, and other similar plants will require the same treatment.

Begonias.—These are likely to suffer from damp if kept in cold frames or cool structures any longer. They will do in the same temperature as advised for Poinsettias, only more liberal ventilation may be given during the day. Keep the atmosphere much drier than is necessary for those plants. For some weeks longer we shall keep plants of the *B. manicata* section cool, using fire heat only when the temperature falls or shows signs of falling below 45°. Let all watering be done in the morning, so that the atmosphere will become dry before the ventilators are closed in the afternoon. *B. Ingrami* and the old *B. semperflorens* are now being placed into 4-inch pots. The latter will be allowed to come into flower, and later plants now in small pots on a shelf close to the glass will be grown on to succeed them. In a temperature of 60° they grow quickly. The best of the early flowering varieties will be retained for flowering again. They can be kept in the same pots, and assisted by the aid of artificial manure. *B. nitida* and its variety *rosea* will be useful presently either for the stove or an intermediate house if allowed to come into flower. The same may be said of *B. Ingrami*, *B. Knowsleyana*, and the coloured forms of *B. semperflorens*. Such Begonias as *B. weltoniensis* and *B. parvifolia* may be placed in a cool house, kept dry, and allowed to rest.

Gardenias.—Plants that have not yet set their buds need not be kept in a higher temperature than 60°. If too warm and too moist they are liable to start again into growth, which has no chance of being ripened thoroughly, deformed flowers resulting. Strong insecticides should not be used for syringing plants that have formed flower buds, as they are almost certain to turn yellow afterwards. Plants that have buds swelling freely may be pushed forward in a temperature at night of 65° to 70°. If the plants are grown in pots, and can be given slight bottom heat, such as a bed of leaves afford, all the better.

Eucharis.—Some care is needed at this season of the year where numbers of plants are grown. They are liable to show flower, and though a few are always useful when quantities are produced at one time it frequently happens that many are wasted. If plants that have completed their growth are removed to a temperature of 50° they can be kept back for a long time without the slightest injury. The soil should be somewhat dry at their roots before removal, and water must be supplied with great care while they are in a lower temperature. The plants are not injured by a lower temperature provided cold draughts are not allowed to reach them.

Stephanotis.—Plants that are intended to flower early should be taken from their trellis and thoroughly cleaned. What pruning is needed may now be done, the soil kept rather dry, and the temperature at 50°. To grow these plants well it is important that they enjoy a complete period of rest.

Allamandas.—These will grow throughout the year if they are encouraged by heat and moisture. Plants that are needed for early flowering should be induced to rest by placing them in a lower temperature and a drier atmosphere. Water may be withheld until the plants flag. Sufficient, however, must be given to prevent the wood shrivelling. *Clerodendron Balfourianum* and *Bougainvilleas* may also be induced to rest.



NOTES ON BEES.

QUEENS FOR NEXT YEAR.

IN addition to having all stocks of bees supplied with ample stores this month, no pains should be spared to make sure that every stock has a young and fertile queen; without that nothing but disappointment will follow next spring and autumn. Many stocks swarmed this year at the Heather, and owing to the sunless weather few of the young queens are fertilised. After an unfertilised queen commences laying, and until the brood is sealed, it is difficult to know by appearance whether she is fertilised or not. A test by which I can discriminate her state is to catch her by both wings, when if unfertilised she contracts her abdomen to very small dimensions, whereas if fertilised the abdomen round the ovaries retains much of its usual dimensions.

TARRING THE INSIDE OF HIVES.

Absorbing or porous hives lately formed an absorbing topic. Some of their advocates seemed to lose sight of the fact that absorbing material could store only a certain quantity of moisture. Plaster of Paris, one of the ingredients recommended, becomes so saturated with moisture as simply to become a wall of water, which as it absorbs gives off moisture so as to seriously affect the health of the bees and destroy the combs and honey.

Double walled hives have a similar tendency, and moreover decay sets in at the angles in a short time after the bees are put in them. As a guard against decay and damp I have for some years tarred the inside of all my double cased hives, in every instance to the great advantage of the bees, demonstrated to a greater extent this year than at any time previously.

DAMP IN HIVES.

Nothing injures a hive so much as damp, whether it arises from internal or external causes. It is now a fitting time to repeat, for the sake of novices, that non-porous material on the top of hives is a great mistake, as also is placing watertight or non-porous material close on the top of porous material. Place porous non-conducting material on the body and crown of the hive in sufficient quantity that the atmosphere cannot conduct the heat from the hive, and over that an impervious roof or covering some distance

from the packing, with sufficient ventilation to carry off all moisture as it escapes from the bees through the packing. A narrow doorway and a proper ventilating floor, together with what is advised above, is all that is necessary to provide or do till April or May, or if all is favourable till June.

RAISING PARTLY FILLED SUPERS ABOVE EMPTY ONES.

We have advised the placing of empty supers above partly filled ones for upwards of thirty years now, and although at times the contrary has been successful, still it is not in accordance with the best management. It is only a haphazard way. I have scarcely ever practised it, and only once did I succeed in getting things to my mind when the empty super was placed beneath the full one. To be successful the weather requires to be exceptionally fine and uninterrupted for some weeks, which is rare in this country. Circumstances compelled me to put the empty supers beneath the partly filled ones at the Heather this year, which has resulted in the bees carrying some of the gathered super honey down to the body of the hive, and filling the body boxes thoroughly with it and the subsequently gathered honey. I need not have expected it otherwise, as the weather never was settled during the whole month of August. I give the failure as prominent as my successes as a warning to others. Had the weather been fine during the latter part of August, when the Heather was in bloom, every available space would have been filled, and the error of placing empty supers between partly filled ones and the crown of the hive would never have been observed. Experience has long taught us that nothing is gained by placing the partly filled supers uppermost, but often much is lost.

THE HEATHER SEASON.

I have observed "A Hallamshire's" remarks, pages 276, 277, regarding the Heather season. Where I took my bees from the 7th of July until the last day of August there was not a single day upon which rain did not fall. Previous to that the weather had been exceptionally fine from April 1st, very little, if any, frost until the morning of the 23rd July—a rather unusual occurrence. The first six days were dry and warm, but always with rain at night. Monday the 12th and Tuesday the 13th of August were the most productive of honey the bees had, but rain fell on both days. The latter was the day in which the greater gathering occurred, and was that when the hive gathered 38 lbs. After the 13th the weather gradually became more rainy, and less honey was gathered daily. The first week in September was dry and warm, but the bloom had nearly gone from Heather, and very little more honey was gathered.

Some people complain they cannot get their bees to take to supers. I have never any difficulty in that. The difficulty is to keep them in them, and that can only be accomplished when the weather is favourable. In such a season as the present has been the bees leave supers and store the body of the hive; the lowering of the temperature is the cause of this, and is explained by the fact that supers are extra room; the bees on the temperature lowering retreat towards the brood nest and cluster there, and as the hive becomes filled draw nearer the doorway.

My good hives, after the hatching of the brood and other losses from consumption and evaporation, &c., stand about 80 lbs. heavier than they were when set down, but the supers are in many cases unsealed. An octagon hive filled completely four supers, but are deficient in weight 25 lbs., and incomplete, although otherwise good. My weaker hives have risen in weight from 10 to 20 lbs. only, but were capable of rising 50 lbs. easily had the weather been settled—a strong argument in favour of having strong hives; and what a boon it would be could we discover some method to prevent swarming and still keep the hive in a normal condition. He who gives us the information will be a benefactor indeed.

It is customary for bees to swarm at the Heather even up till the middle of September, and rarely will a strong stock supersede

the queen regnant without swarming. Sometimes very few bees leave and may not be observed. Regarding the ripening process, I disagree with many writers upon this question. I always held the opinion that extracting the water takes place while the bee is sipping it from the flower while on the wing, and being lighter than honey is evaporated from the hive by the heat of the bees, so great sometimes this year that I have witnessed the vapour ascending from the sides of the hive when rain fell upon them, and the vapour issuing from the mouth of hives illustrates my idea. Therefore I differ in opinion from "A Hallamshire Bee-keeper" regarding bees being able to ripen the honey they gather daily, even although it be greater than the quantity gathered by my strong stocks. The more honey a colony of bees gathers in a day the better able they are to ripen it—if the term is a proper one, it sounds harsh in my ear. In fact, a hive able to gather 33 lbs. a day is better able to evaporate the excessive moisture than one able to gather 1 lb. daily only. I have repeatedly watched bees storing honey as they came from the fields, and it never underwent any other process than the first storing, and the supposition that as the water rose on the top of the honey the bees sipped it off, the work of a few seconds only.

THE PUNIC BEE.

Although the Punic bees have not excelled at the Heather they seem assiduous workers at home, and may by another season prove themselves good honey gatherers.

YOUNG QUEENS.

It is perhaps not out of place to bring before your readers the doings of a young queen fertilised about the 7th September, showing how completely it sets at defiance all the theories of "breaking seals of honeycomb," "stimulative feeding," or "contracting or spreading the brood, &c." In ten days' time she laid nearly 30,000 eggs, the only thing conducive to this is what I have so long advocated—namely, having the hive well stored with honey and pollen. It would be interesting to know what those think of this that say "a queen must be some months old before she is at her best."

ERRATUM.

At page 255, second article, last line but one, instead of "several ombs," read "several hundredweight of wax."—A LANARKSHIRE BEE-KEEPER.



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

List of Gardeners (J. L. G.).—There are numbers of small local improvement societies, but nothing of a general character, though you can obtain all the information you require from the "Horticultural Directory," published at this office, price 1s.; post free, 1s. 3d.

Bluebottle Flies in Conservatory (J. C.).—We can only suggest their destruction by suspending soda-water or similar bottles half filled with beer, made very sweet with sugar or syrup, near their haunts. The flies, we presume, are attracted by the secretion emanating from insects infesting the plants, the flies being very partial to the

excrementitious matter of the scale insects. If the plants are infested with insects they must be destroyed, and then the flies will cease their attentions.

Improving Old Orchard Trees (J. J. C.).—As you say manure is scarce, you perhaps cannot do better than follow the practice described by Mr. J. Wright on page 237, which so well answered the desired purpose. It is also recommended by Mr. Tonks in our present issue. The best Peruvian guano is good for the purpose, and may be applied at the strength of an ounce to each gallon of water, after the earth has been previously moistened to a depth of 2 feet with pure water. For assisting its penetration holes may be driven down with an iron rod here and there, and these filled repeatedly with water, and subsequently liquid manure. Information relative to the analyses of soils can be obtained from the Secretary of the Royal Agricultural Society, Mr. Ernest Clarke, 12, Hanover Square, London.

Vines Unsatisfactory (Constant Reader).—The roots are probably in an unfavourable medium, the border being wet, close, and cold, the roots at a considerable distance from the surface. We suggest that the surface soil be removed down to the roots, and some of it removed from amongst them, lifting and laying in fresh loam with an admixture of one-sixth old mortar rubbish, and a sprinkling of crushed bones. This should be done now whilst the leaves are on the Vines. The roots should not be covered deeper than 3 or 4 inches with fresh soil, and they should be mulched with leaves about 6 inches thick, with a little litter on top to prevent their blowing about. The drainage must be examined, and if defective rectified. The only alternative course is to allow more lateral extension of the Vines, which by encouraging root action will, to a certain extent, counteract the tendency to defect of colour, and be serviceable against shanking.

White Pinks for Forcing (B. R. S.).—Some time ago a correspondent gave the following description of a method he had found successful:—"During the first week in October we look over our elumps, and choose such as are most compact and are then showing a number of small fibrous roots at the base of the season's growth. Some plants appear to emit roots much more freely than others, hence our care in selecting. Cutting them off with 2 or 3 inches of old stem will ensure having a cluster of growths on each piece. According to their size place two, three, or four together in a 4 or 5-inch pot, which may form one bushy plant. Place them in a shady position or cool frame for a few weeks, when the small hair-like roots soon commence growing, and by the middle of February reach the pot sides. If the plants have had a cool airy position sheltered from heavy rains and frost they may be introduced as required into gentle moist heat, and will give a good supply of bloom from Easter onwards. Some other Pinks may be flowered under the same treatment, though not quite so early, nor are they so valuable as the old white."

Euphorbia jacquiniæflora (M. T.).—Plants that have been in cold frames up to the present time must be removed to a house or pit where the atmosphere can be drier at night, and the temperature at about 55°. If left in cold frames after this date the foliage is very liable to turn yellow, especially if too much water is given at the roots. If removed to a heated structure care must be taken that the plants are not excited again into growth, or they will soon become tall and weak, and in the end flower but poorly. To avoid this no artificial heat will be needed for some weeks yet during the day, and only at night when the temperature is likely to fall too low. On all favourable occasions air should be liberally admitted during the day as well as at night. If the pots are full of roots stimulants may be given in a weak state every time water is applied, nothing being better for these plants than liquid made from cow manure and clear soot water. If the plants display any signs of starting into growth feeding must be discontinued for a time, at least until this tendency is checked.

Constructing Tomato House (J. Williams).—The height at the sides is of no consequence. It may be 18 inches, so as to admit of side ventilation, and all you want in that case is sufficient head room in the centre, about 8 feet 6 inches from the floor to the ridge being necessary. The pathway may be sunk, which will save having so sharp a pitch, which will of course, as regards length, be proportionate to the width of the house. An angle of about 45° would be suitable. A width of 9 feet to 10 feet 6 inches would be suitable, and the length could be corresponding to the requirements or means. Provision should be made at the top of the house for ample ventilation. There are other houses of an economical kind, in which the sides can be of wood to a height of about 4 feet 6 inches, with a board opening the whole length on both sides for ventilation, similar provision being made at the top of the house. The width of the house ought not to be less than 8 feet 6 inches, which will allow of a 2-feet 6-inch pathway and a 3-feet border on each side. It may be any greater width, and in respect of the pitch of the roof it may fall or have incline of 1 foot in every yard of width.

Treatment of Narcissus in Pots (G. W.).—It will be quite safe to leave the bulbs plunged in the ground and covered with ashes, sand, or cocoanut-fibre refuse until the close of December or later. They will probably be advanced in growth, which will not be injured, as they are hardy. It is advisable, however, to afford protection in severe weather, nothing answering better than a single or double thickness of mats, kept clear from the growths by a framework of laths, removing the mats in mild weather. The night temperature is quite high enough, and the day also by artificial means, but keep them near to the glass, and afford air on all favourable occasions. In fine weather the growths may be sprinkled daily, but it is more important to maintain a genial

condition of the atmosphere by damping cool, not heated, surfaces when they become dry. The water draining from pots in watering will be sufficient in most cases during severe weather, as a saturated atmosphere is not then desirable. Stand the plants outdoors as soon as the weather becomes sufficiently settled, as it will by the middle of May, and a sheltered situation being chosen they will mature much better than if they were kept under glass until the middle of June. If they can be hardened a little before being placed out it would be an advantage. Plunge them in ashes outdoors, and afford plenty of water and liquid manure occasionally when they are in full growth, and up to the foliage showing signs of becoming yellow for ripening, when it will suffice to keep the soil moist. Early potting is very desirable, the time you name (early August) being good, and plunged in ashes to the rim of the pots they could remain outdoors as long as you desire, only before frost it would be advisable to cover with 3 inches thickness of cocoanut-fibre refuse. Nothing is so injurious to Daffodils as keeping them out of the soil and not planting until late, or when those left to Nature would be well furnished with fresh roots.

Increasing Deutzias (S. T.).—If it is necessary to increase the stock of these for another year's forcing, strong plants may be lifted from outside borders and potted at once. Many lift these plants and force them the same season, but this is a mistake, for they should be established in their pots for one year before forcing them into bloom. If placed at once in 6 to 8-inch pots, according to their size, they will become partially established before the foliage falls, and will make splendid plants for another year. They can stand outside until the approach of severe frost, when they should be pruned and the pots plunged in a cold frame. If allowed to start into growth and are encouraged in cold frames until June they will be ripened early, and in a fit state for forcing into bloom early in the season. It is a good plan to lift a few plants annually from the outside for potting, and then the stock of these plants can be kept in admirable condition. Plants that have been weakened by forcing may now be turned out of their pots and have their roots reduced by one-half and repotted in fresh soil. These if given cold frame treatment will thoroughly recruit themselves in a season, and be in the best condition for forcing. A portion of our stock is subjected to this treatment annually, and by this simple method the whole of the plants are kept in good condition. Plants that die or do not start freely into growth are replaced by new stock from the borders. The plants for this purpose are raised by striking cuttings in heat in spring, placing them singly in boxes 2 inches apart, and afterwards planting them out.

Gas Lime for Ground to be Cropped with Potatoes (J. E. P.).—We use gas lime on ground intended for Potatoes alike as a preventive of attack by vermin and fungi. The gas lime is from our own works, the gas being manufactured for lighting the mansion, stables, &c., driving engine for pumping, &c., consequently we have gas lime always available. The best time to apply it is to ground to be cropped with Potatoes in October or November before the ground is dug or manured, and at the rate of half a bushel per rod (30½ square yards). The gas lime is disposed as evenly as possible on the ground, and either lightly hoed or pointed in with a fork. At that time vermin and fungoid germs are on or near the surface, and more readily available for attack, and any injurious effect the gas lime may have passes off by exposure to the atmosphere; in fact, passes quickly into the gypsum state, in which it is not a despicable manure. After lying a month or so the ground is manured if necessary, the gas lime being buried in the work of forking or digging. In spring, before the Potatoes are planted, we occasionally use the gas lime again, particularly for ground that has not previously or recently been dressed with it, and at the same rate as in the autumn, spreading it evenly on the surface, and leaving it there for at least a month before "setting" the Potatoes. This, however, is only practised when the ground is foul with slugs, &c., as the full application of gas lime—viz., 1 bushel per rod, should only be had recourse to when the soil as shown by the attacks on the crops is extremely foul. As to the beneficial effects of dressing with gas lime as a preventive of scab, we can only state that on some ground which three years ago gave scabbed crops, the Potatoes are this year free, the land having been consecutively cropped with Potatoes, which in this particular instance is a necessity. It is not, however, sound practice to follow Potatoes on ground that produce scabbed tubers, nor to use "seed" tubers that are scabbed or taken from an infected crop. Necessity, however, precludes choice, and it is not certain that the ground is at fault, as tubers show no trace of scab at lifting, but during the winter it develops, and they become much deteriorated in value, the quality being invariably good. Scabbing does not always arise from the attacks of a fungus, as in some instances there is no trace of the action of fungi, and in such cases may arise from corrosive substances in the soil.

Names of Plants.—We only undertake to name species of plants not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. M.).—1, *Solidago virga-aurea*; 2, *Begonia semperflorans*; 4, *Euonymus japonicus variegatus*; 5, *Pachyphyton bracteatum*. The others were insufficient for recognition. (A. T. M.).—Send a better specimen with flowers. (W. R.).—1, *Aphelandra cristata*; 2, *A. aurantiaca*.

TRADE CATALOGUES RECEIVED.

S. G. Ramsey, Wrotham, Kent.—*Catalogue of Roses.*J. Cheal & Sons, Crawley, Sussex.—*Catalogues of Trees and Shrubs and Bulbs.*Fred. Horsman & Co., Colchester.—*Catalogue of Orchid Specialties, Autumn, 1889.*Benjamin R. Cant, Colchester.—*Descriptive Rose Catalogue.*Oakshott & Millard, Reading.—*Catalogue of Seed Corn.*

COVENT GARDEN MARKET.—OCTOBER 2ND.

Trade and prices remain the same.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and			Peaches, dozen	2	0
" Canada, per barrel	0	0	Plums, $\frac{1}{2}$ -sieve	3	0
Cherries, $\frac{1}{2}$ sieve	0	0	Red Currants, per $\frac{1}{2}$ -sieve	0	0
Grapes, per lb.	0	6	Black "	0	0
Lemons, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2	0 to 8	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Mushrooms, punnet	0	6
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bushel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches	2	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capsicums, per 100	0	0	" Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Canliflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	6	Scorzonera, bundle	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	3
Cucumbers, each	0	3	Spinach, bushel	3	0
Endive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Leeks, bunch	0	3			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	3	0 to 6	Lilium longiflorum, 12		
Asters, per bunch, French	0	0	blooms	3	0 to 6
" doz-n, English	4	0	Maidenhair Fern, doz.		
Bonvardias, bunch	0	6	bunches	4	0
Carnations, 12 blooms ..	1	0	Marguerites, 12 bunches	2	0
" 12 bunches	4	0	Mignonette, 12 bunches	1	0
Chrysanthemums, dozen			Myosotis or Forgetmenots		
blooms	1	0	doz. bunches	1	6
Obryanthemum, dozen			Pansies, dozen bunches ..	0	0
bunches	2	0	Pelargoniums, 12 trusses	0	6
Clove Carnations, 12 bunches	0	0	" scarlet, 12 bunches	3	0
Cornflower, doz. bunches	1	0	Pinks (various) 12 bunches	0	0
Dahlias, doz. n bunches ..	2	0	Poppies, various, 12 bunches	0	0
Eucharis, dozen	3	0	Reses (indoor), dozen ..	0	6
Gaillardia picta, 12 bunches	2	0	" Mixed, doz. bunches	3	0
Gardenias, 12 blooms ..	2	0	" Red, dozen bunches	4	0
Glaudiol per bunch	0	6	" 12 blooms	0	6
Glaudiolus brecheyleyensis,			" Tea, white, dozen ..	1	0
doz. sprays	1	0	" Yellow	2	0
Helianthus, or Sun flower,			Spiraea, dozen bunches ..	0	0
dozen bunches	3	0	Stephanotis, doz. sprays	3	0
" large, dozen blooms	0	0	Stocks, dozen bunches ..	3	0
Lapageria, 12 blooms ..	1	0	Sweet Peas doz. bunches	2	0
Lavender, dozen bunches	0	0	Sweet Sultan, "	3	0
Lilium auratum, 12 blms	0	0	Tuberose, 12 blooms ..	0	6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen ..	3	0 to 9
Arum Lilies, per dozen ..	0	0	Geraniums, Ivy, doz. ..	0	0
Arbor vitae (golden), dozen	6	0	Hydrangea, per dozen ..	9	0
Asters, 12 pots	3	0	Labellia, per dozen ..	0	0
Begonias, various, per doz.	4	0	Marguerite Daisy, dozen	6	0
Balsams, per dozen ..	0	0	Mignonette, per dozen ..	0	0
Caladiums, per doz. ..	0	0	Musk, per dozen	0	0
Calceolarias, per dozen	0	0	Myrtles, dozen	6	0
Christmas Rose	0	0	Nasturtiums, per dozen ..	0	0
Chrysanthemums, dozen	8	0	Palms, in var., each ..	2	6
Cockscombs, per dozen ..	3	0	Pelargoniums, scarlet, 12	2	0
Dracena terminalis, doz.	24	0	P. l. regium, per dozen ..	0	0
Dracena viridis, doz. ..	12	0	Rhodanthe, per dozen ..	0	0
Erica Cavendishii, doz. ..	0	0	Saxifraga pyramidalis,		
Euonymus, var. dozen	6	0	per dozen	0	0
Evergreens, in var., dozen	6	0	Solanums, per dozen ..	6	0
Ferns, in variety, dozen	4	0	Spiraea, per dozen	0	0
Ficus elastica, each ..	1	6	" palmata, per doz. ..	0	0
Foliage plants, var., each	2	0			

Michaelmas. The drains can very well wait till winter, but now we must turn every hour of fine weather to account to get as much of the land broken up as we can, and we must endeavour to do this in the right way. Walking recently over a heavy land farm with an advocate of shallow ploughing we saw a lot of the common Bindweed (*Convolvulus arvensis*) on a bare fallow, which had been left during harvest long enough for growth to appear well above the surface. The thick fleshy roots of the Bindweed had remained undisturbed in the soil near the surface, all through the "summering" of the land, simply because the ploughshare never entered more than 2 or 3 inches into it. There was the enemy left undisturbed to send up growth and enfold the stems of the next corn crop in its baleful grasp. The remedy was deep ploughing followed by a grubber, and a cultivator or duck-foot harrow pricking up every root by hand again and again after each turn of the implements. The Suffolk duck-foot harrow is an invaluable implement for thorough cultivation. In point of fact it is a light cultivator, with the tines curved forward and flattened at the ends, so as to sever roots as well as dividing the soil. It is of simple construction, strong, yet of very light draught, and is not to be regarded as a mere cleaning tool, but as one of the best tillage implements.

We have said that when a farm comes in hand from a tenant under the covenants of old agreements a certain proportion is invariably bare fallow. As a matter of expediency this is sown with winter corn, light harrows only being used before the drill. However fair to the eye the fallow may be its actual condition is always doubtful, and if the weather is favourable a turn or two of the duck-foot may have a favourable influence upon the Wheat crop as well as bring a lot of couch grass to the surface. A well managed fallow should be innocent of perennial weeds, but how frequently are they mismanaged. Very seldom can the number of ploughings and harrowings be taken for an assurance of thorough cultivation. If a proper interval had been allowed between each time of stirring the soil, grass and other weeds would have been destroyed in a fine summer, but it is not often that an outgoing tenant pays much attention to the interests of those who come after him upon the land, and fallow ploughing is but too often done when convenient and not when necessary.

To an experienced eye the manner in which autumn tillages are done affords a tolerably clear indication of subsequent results. Every foul stubble should be pared with broadshares if they can be used, then with light harrows all the surface weeds can be got out and burnt. A few turns with the duck-foot next will bring other weed roots to the surface, and then it requires some judgment whether to plough and follow with a grubber or cultivator or not. The object of autumn tillage is to clean the land as quickly as possible, and this must be done in accordance with the state of the weather and condition of the soil. We want the land clean, dry, and thoroughly disintegrated before it is cropped; that is our aim before all things, and we can for the moment leave out all thought or care about fertility, as we can impart that at will at any time by means of chemical manures. When land is intended for spring cropping disintegration is a certainty if we finish our work now by throwing up the land into high ridges with a double-breasted plough. With sound under drainage, taking all superfluous water away quickly, no matter how wet a winter may follow, the soil remains dry in the sense of being free from any hurtful accumulation of water in it. Frost, snow, wind, and rain all have a beneficial effect upon it, and in spring it is in the best possible condition to receive manure and seed.

But we may be told that to thus do all we can to break up the land now and to ridge it for winter leads to a loss of nitrogen. Have not the Rothamstead experiments proved this? Yes, they have; but we have ample compensation for such loss in our deep, fine, clean seed bed, and we know too that air does not circulate freely in soil without imparting some degree of fertility to it, so that it is a clear case of give and take with very much in



LANDLORDS' FARMING.

ALTHOUGH drainage has been mentioned as of primary importance in reclaiming poor land, yet tillage in reality comes first at

favour of the take. No doubt it requires some experience to enable one to manage tillage in the most direct and thorough way, so as to economise labour, and yet do all that is necessary; but even a beginner cannot go far wrong if he acts upon the lines indicated and resolves that, come what may, his tillages shall be both deep and thorough. If he does this he has certainly taken the first step towards improvement. Whether it may eventually lead to profitable results depends upon very much more than this, and we have next to consider our course of cropping, and to try and see whether it will answer best to keep the land under a regular four or five course shift or to lay it down for a few years.

(To be continued.)

WORK ON THE HOME FARM.

Change of food tends to promote health in all animals, and is of especial importance for sheep. The ewe flock is now upon the last stubbles, with a change to Sainfoin and pasture, and on the whole it is healthy. The exception is present in frequent cases of foot-rot, which are kept from becoming bad by constant attention. Much depends upon the shepherd in keeping down this contagious disease, and if he becomes at all negligent he cannot conceal it, for not only do lame sheep multiply, but there is a rapid falling off in condition of all the badly affected animals. We recently heard it questioned if foot-rot were infectious, and we repeat that we proved it to be so many years ago. We are using both shearling and lamb tups this season of necessity, and not of design. We always prefer the younger tups, but the purchase of fresh tups yearly becomes a serious item if really well-bred animals are required. It is well to change them daily in all large flocks, and to feed them well always. Many flock masters prefer to tup with the flock upon White Turnips; well, we have no objection, but it is mere prejudice that could see any advantage in such a plan, which doubtless had its origin upon large corn-growing farms, where it answered to sow Turnips as early as possible, simply because there was so little pasture. The risk of thus having to depend upon so uncertain a crop is obvious, and much inconvenience must follow in an unfavourable root year. Lambs at all forward are approaching the hogget stage, and it answers well to push them on with plenty of trough food when they leave the stubbles. This food need not contain any cake, but may consist of crushed home grown corn. Oats, Peas, Beans, and Barley may often all be so turned to better account than to be sold as corn. A field of early Turnips folded off now will be available for Wheat, and the sheep are all the better for being upon the arable land so long as it continues firm enough for folding. But they must be withdrawn if very wet weather sets in, for no sheep can continue to thrive in such mud puddles as they are often kept upon in winter, with mud half way up the legs and nothing but mud to lie down upon. Under such conditions the strain upon the frames of the strongest must be very severe.

REVIEW OF BOOK.

The Book of the Farm. In six Divisions—Division III. By HENRY STEPHENS, F.R.S.E. Fourth Edition. Revised and in great part re-written by JAMES MACDONALD. Blackwood & Son, Edinburgh and London.

UNDER the heading of "Practice—Spring," the third volume of this very practical work contains—Cattle in Spring, Sheep in Spring, Manures and Manuring, and Seed-time. Each subject is treated fully, not from a particular point of view, but by a series of deductions from the best practice generally, and the high character of the work is well sustained. To give some idea of the exhaustive manner in which each subject is treated we may take that upon calving and calf-rearing, to which are devoted some 160 paragraphs, each under its distinctive heading. In no other work have we seen such a fund of sound practical information upon this subject, and the fact of the heading of each paragraph being given in a table of contents makes reference easy, and adds materially to its utility.

The treatment of sheep in spring points naturally to the lambing season, and the entire process of lambing with its attendant risk is fully discussed. The views given of some of the best flockmasters upon abortion are of special value as affording direct information of its cause and how to avoid it.

In his introduction to the important section of manures and manuring the able reviser says, "In the advanced agriculture of the present day the question of manuring possesses far more importance and involves greater difficulties than were associated with it in the elementary farming of olden times. The extension and accumulation of knowledge in regard to the maintenance, utilisation, and recuperation of fertility; the discovery and development of new sources of manurial commodities; and the vastly increased and still growing consumption of farm produce of all descriptions have, with their combined influence, contributed largely to the great revolution which, since 1840, has taken place in British farm practice. The farmer can no longer wait for the recuperating power of Nature to restore reduced fertility. He is not content to merely "turn over," as it were, the natural store of plant food which the soil possesses. Before the advent of artificial manures and feeding stuffs the prevailing system of farming was little else than a turning

over of the inherent fertility of the soil—the abstraction of fertility from one field in certain crops, and the returning of it, or a great part of it, to another field in the shape of farmyard manure. This, however, was a slow process, quite unequal to the wants, the aspirations, and resources of the progressive age in which we live. A speedier, more intense, more artificial system of farming has arisen, and to make provision for the greater demands which are now made upon the productive powers of the soil active and persistent attention has for years been devoted by scientists, capitalists, and practical farmers to the all-important question of *manuring*.

"By the discovery of vast natural deposits of manurial elements and by the manufacture of useful fertilisers from waste products and other material, great possibilities, hitherto undreamt of, have been placed in the hands of the farmer. By the means of these agencies it is possible for him to vastly increase and hasten the production of his farm, not only by adding to the supply of plant food already in the soil, but also by so stimulating, equalising, and preparing that supply as to render it far more serviceable and nutritious to the growing crops."

For this and other cognate reasons he goes on to explain why exceptional attention and space have been given to the subject in this volume, and why he has taken to his aid the writings of our most eminent chemists and practical agriculturists. He then deals with the exhaustion and restoration of fertility in the soil, the manufacture and use of farmyard manure, and artificial manures are classified in groups as nitrogenous, phosphatic, potassic, and calcareous manures. Much valuable information follows of the application of manures, and then we have the Rothamsted, Aberdeen, and Sussex experiments and results, with those of the Highland and Agricultural Societies, given with sufficient detail and fulness to render them of real practical utility to every earnest intelligent reader.

Under "Seed Time" the cultivation of spring corn is treated in all its various aspects of soil tillage—the varieties, preparation, and sowing of the seed. Permanent pasture hardly has the attention it deserves. Descriptions of Grasses and Clovers are taken from Mr. Martin J. Sutton's great work on permanent pastures, and some useful lists for layers of from one to seven years' duration are given. The diagrams showing the influence of drainage and tillage upon seed germination are of especial value, and the few paragraphs on "Forage Crops" which follow bring this valuable addition to agricultural literature to an end. We certainly regret space should not have been found in it for a few emphatic hints upon the importance of pasture cultivation, about which such general remissness prevails, for it is more than ever desirable that every acre of land under cultivation should be rendered as profitable as is possible.

OUR LETTER BOX.

Winter Dietary for Channel Island Cows (*A Subscriber*).—

Let the best meadow hay be given three times daily, only as much as the cows can consume being given each time. A little watchfulness will soon show how much they require. At milking time both morning and evening give each cow 3 lbs. of a mixture of equal parts of bran, crushed oats, decorticated cotton cake, and Smith's palm nut meal. This dietary is sufficient, but if you have any Carrots or Cabbages a few may be given till Christmas, and a little Mangold may be used in the new year. You ask for the best and cheapest way of feeding in winter, and we may remind you that the cheapest way is not of necessity that which costs the least, but which gives the best return upon expenditure. The best way also is that which induces a full flow of milk that is entirely pure and sweet.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1889. September.		Baromet. at Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	in.	
Sunday	22	29.649	49.9	46.5	N.W.	52.9	57.9	38.2	93.9	81.4	—	
Monday	23	29.931	41.6	42.0	W.	51.8	57.3	35.1	85.9	28.4	0.200	
Tuesday	24	29.373	55.2	54.4	S.E.	52.0	60.1	45.9	75.9	45.1	0.731	
Wednesday ..	25	29.812	45.0	41.9	W.	52.0	55.5	41.2	98.8	34.2	—	
Thursday	26	30.190	47.9	44.9	W.	50.8	58.3	35.3	86.3	29.9	—	
Friday	27	30.146	57.9	55.5	S.W.	51.9	66.0	50.7	87.7	48.2	—	
Saturday	28	29.860	55.9	50.9	S.W.	54.6	62.2	53.1	101.0	47.2	—	
		29.834	51.1	43.0		52.3	59.6	42.6	90.2	28.0	0.934	

REMARKS.

22nd.—Fair morning, overcast at times, but generally fine; bright night.

23rd.—Overcast cold morning; dull day and night.

24th.—Dull damp morning, with heavy rain; dull evening.

25th.—Fine morning, day, and night, with fresh breeze.

26th.—Bright sunshiny morning, fine day and night.

27th.—Dull and overcast, slight rain; fine day and night.

28th.—Fair, but rather dull all day.

Temperature slightly below the previous week, and about 2° below the average.—G. J. SYMONS.



ROSE ANALYSIS.

1886—1889.

TAKING down the names of the Roses at the National Rose Society's Exhibition at the Crystal Palace proved this year no easy task, owing to the number of visitors and the very limited area into which the Show was crowded. Thanks, however, to the kind assistance given to me by several exhibitors and other friends, to whom I must here express my great indebtedness, but few stands were missed. For the purposes of our analysis this is extremely fortunate. The three previous Rose seasons having been unusually late ones, a very forward summer like that of the present year was much needed in order to help to keep the balance true between the early and late varieties; it is therefore a matter for congratulation that a sufficiently complete record of the Roses in the prize stands at this Show should have been secured.

Before proceeding to consider the tables more in detail it may be well to explain once again the system upon which they have been compiled. All those varieties which were sent out prior to 1883 find places in the analysis according to the average number of times they were staged at the last four metropolitan Exhibitions of the Society. In the case of those Roses introduced during that year their average for the last three Shows is alone taken into consideration, for those of 1884 their average for the last two Shows only, while the positions accorded to the still newer sorts are entirely dependent upon how they were represented at the Exhibition this year.

The number of Roses tabulated in each of the four years has been as follows:—

	HYBRID PERPETUALS.	TEAS AND NOISETTES.
1886.....	1038	509
1887.....	1130	642
1888.....	1247	854
1889.....	1176	778
	<hr/> 4591	<hr/> 2783

Coming now to the table of Hybrid Perpetuals it is interesting as usual to notice how certain seasons favour certain Roses. For instance, at the Crystal Palace this year Captain Christy appeared in no fewer than forty-two stands, or in a greater number than any other H.P., whereas in 1887 it was to be seen in only eight. Alfred Colomb also took a good position, its average record for the previous three shows being eighteen, while this year it was set up in as many as thirty stands. Among other varieties specially favoured in one way or another by the past summer may be mentioned Merveille de Lyon, Comtesse d'Oxford, Marie Finger, Pride of Waltham, Reynolds Hole, Star of Waltham, Pierre Notting, Charles Darwin, and Queen of Queens. On the other hand Madame G. Luizet was much less frequently shown than usual. Nevertheless, owing to its very superior form in the three previous years it still manages to hold the premier position in the analysis, having been staged no fewer than 145 times at the four exhibitions. Lady Mary Fitzwilliam, Baroness Rothschild, Etienne Levet, Le Havre, Sénateur Vaisse, Duke of Edinburgh, and Général Jacqueminot were also indifferently represented. Duke of Edinburgh, for instance, is evidently not a dry or hot season Rose, for this year it appeared in only eight stands against thirty-three in the cool and wet summer of 1888. This would also seem to be the case with Général Jacqueminot and Etienne Levet. Marie Baumann, A. K. Williams, La France, and François Michelin were almost equally

well shown in each of the four years, but the same can be said of but few varieties, nearly all being more or less at the mercy of the seasons.

The following Roses were this year exhibited about twice as frequently by amateurs as by nurserymen:—Madame G. Luizet, La France, François Michelin, Marie Finger, Captain Christy, Louis Van Houtte, Marie Verdier, Camille Bernardin, and Dr. Andry. Whereas those sorts which as greatly predominated in the nurserymen's stands were Lady Mary Fitzwilliam, Xavier Olibo, Comtesse d'Oxford, Ferdinand de Lesseps, Reynolds Hole, and Queen of Queens.

Very few new Hybrid Perpetuals find places in the analysis. Of those sent out in 1884 the only representative is Victor Hugo, and this has rather lost than gained ground since last year. Her Majesty, which was first distributed in 1885, has already proved itself a splendid exhibition Rose. In fact at the Crystal Palace this year there were only three other H.P.'s more numerous shown—Captain Christy, La France, and Merveille de Lyon. The year 1886 is altogether unrepresented. In 1887, however, appeared Earl of Dufferin, Mrs. John Laing, and Silver Queen. The Earl of Dufferin now stands at No. 25, Mrs. John Laing at No. 29, and Silver Queen at No. 44 on the list. I am not as yet a very ardent admirer of the Earl, but could not well speak in too glowing terms of Mrs. John Laing, which is certainly the finest Rose of recent introduction. It may be noticed in passing that four out of the five new varieties above mentioned were raised in the British Isles—Her Majesty and Mrs. John Laing by Mr. Henry Bennett, and Silver Queen by Mr. William Paul in England, and Earl of Dufferin by Messrs. A. Dickson & Sons in Ireland.

Catherine Mermet still stands at the head of the list of Teas and Noisettes owing to its consistently good form at the last three exhibitions. The most prominent variety this year, however, was that superb but somewhat fickle beauty, Comtesse de Nadaillac, which was staged as many as fifty-seven times, or more frequently than any other Rose in the Show. Niphetos, Madame de Watteville, Jean Ducher, Madame Cusin, Princess of Wales, Francisca Krüger, and Madame A. Jacquier also appeared in more or less unusual force. On the other hand, as might have been expected in so early a summer, Maréchal Niel was to be seen in but few stands—fourteen against forty-four in 1887. Madame Lambard, as a show flower perhaps the most uncertain member of its race, was shown in only twelve stands, whereas last year it was to be seen in fifty-one. Again, Marie Van Houtte was staged only eighteen times, but in 1888 fifty-seven times. Anna Ollivier was also seldom exhibited.

As regards the newer varieties, Souvenir de Gabrielle Drevet (1884) is evidently a cool season Tea, for although a year older it was much less frequently shown at the last Exhibition than at the previous one. The Bride, which first appeared in 1885, has already reached the fourth place in the analysis, having risen no fewer than eleven difficult steps since last year. As in the case of the H.P.'s, there is no Tea or Noisette to represent the year 1886. The only other new variety is Ethel Brownlow, which was sent out in 1887, and now stands at No. 24. Of these three new Tea Roses there is but one which came to us from France—Souvenir de Gabrielle Drevet. The Bride sported from Catherine Mermet in America, while Ethel Brownlow was raised by Messrs. A. Dickson & Sons at Belfast.

I again append a select list of Roses that may be recommended for general cultivation, and yet which are at the same time among the very choicest of our exhibition Roses.

HYBRID PERPETUALS.—*Light-coloured Varieties*—Madame G. Luizet, La France, Merveille de Lyon, Captain Christy, Marie Finger, Baroness Rothschild, Mrs. J. Laing, and Marguerite de St. Amand. *Medium Reds*.—François Michelin, Ulrich Brunner, Marie Verdier, Marquise de Castellane, Camille Bernardin, Comtesse d'Oxford, Dupuy Jamain, Heinrich Schultheis, and Suzanne

Marie Rodocanachi. *Reds*.—Marie Baumann, A. K. Williams, Alfred Colomb, Prince Arthur, Le Havre, E. Y. Teas, Ferdinand de Lesseps, Sénateur Vaisse, and Earl of Pembroke. *Dark Varieties*.—Charles Lefebvre, Louis Van Houtte, Horace Vernet, Duke of Wellington, Duke of Connaught, and Sir Rowland Hill.

TEAS AND NOISETTES.—Innocente Pirola, Souvenir d'un Ami, Caroline Kuster (N.), Marie Van Houtte, Madame de Watteville, Hon. Edith Gifford, Madame Lambard, Anna Ollivier, Francisca

Krüger, Rubens, Souvenir de G. Drevet, Perle des Jardins, Souvenir de Thérèse Levet, and Souvenir de S. A. Prince.

HYBRID TEAS.—Grace Darling and Viscountess Folkestone.

BOURBON.—Souvenir de la Malmaison.

CLIMBING ROSES.—William Allen Richardson (N.), Gloire de Dijon (T.), Bouquet d'Or (N.), Belle Lyonnaise (T.). *Summer-flowering Varieties*.—Blairii (H.C.), Charles Lawson (H.B.), Coupe d'Hébé (H.B.), Bennett's Seedling (Ayr.), Félicité Perpetue (Evergreen), and Madame Plantier (H.N.).—E. M., *Berkhamsted*.

HYBRID PERPETUALS.

Position in Present Analysis.	Average Number of Times Shown in the Four Years.	Number of Times Shown in 1889.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	36.2	24	Madame Gabriel Luizet	1877	Liabaud	Light silvery pink.
2	33.0	33	Her Majesty	1885	Bennett	Pale rose.
3	32.5	38	La France	1867	Guillot	Silvery rose. B.
4	31.5	31	Marie Baumann	1863	Baumann	Soft carmine red.
5	30.8	30	A. K. Williams	1877	Schwartz	Bright carmine red.
6	28.3	33	Ulrich Brunner	1881	Levet	Cherry red.
7	27.0	34	Merveille de Lyon	1882	Pernet	White.
8	26.5	23	François Michelin	1871	Levet	Deep rose.
9	26.0	42	Captain Christy	1873	Lacharme	Delicate flesh.
10	24.7	29	Marie Rady	1865	Fontaine	Bright carmine red.
11	22.8	17	Lady Mary Fitzwilliam	1882	Bennett	Rosy flesh.
11	22.8	24	Marie Finger	1873	Raimbaud	Light salmon rose.
12	21.0	30	Alfred Colomb	1865	Lacharme	Bright carmine red.
13	20.0	15	Charles Lefebvre	1861	Lacharme	Purplish crimson.
14	18.7	17	Louis Van Houtte	1869	Lacharme	Deep crimson maroon.
15	18.3	10	Etienne Levet	1871	Levet	Carmine rose.
16	17.3	15	Xavier Olibo	1864	Lacharme	Dark velvety crimson.
17	17.0	13	Baroness Rothschild	1867	Pernet	Light pink.
18	16.8	8	Duke of Edinburgh	1868	Paul & Son	Scarlet crimson.
19	16.0	20	Marie Verdier	1877	E. Verdier	Pure rose.
20	15.3	14	Horace Vernet	1866	Guillot	Purplish crimson, shaded.
21	15.0	8	Marquise de Castellane	1869	Pernet	Clear cherry rose.
22	14.7	13	Camille Bernardin	1865	Gautreau	Light crimson.
23	14.3	12	Duchesse de Vallombrosa	1875	Schwartz	Pale flesh.
24	14.2	20	Comtesse d'Oxford	1869	Guillot	Carmine violet.
24	14.2	8	Prince Arthur	1875	Cant	Bright crimson.
25	14.0	14	Earl of Dufferin	1887	A. Dickson & Son	Deep crimson.
26	13.8	10	Le Havre	1871	Eude	Vermilion red.
26	13.8	8	Monsieur Noman	1866	Guillot	Pale rosy pink.
27	13.3	15	Beauty of Waltham	1862	W. Paul & Son	Rosy crimson.
28	12.5	13	Dr. Andry	1864	E. Verdier	Bright crimson.
29	12.0	5	Marie Cointet	1872	Guillot	Light pink.
29	12.0	12	Mrs. John Laing	1887	Bennett	Light pink.
30	11.8	8	Abel Carrière	1875	E. Verdier	Crimson maroon.
30	11.8	9	Duke of Wellington	1864	Granger	Vivid crimson, shaded.
30	11.8	14	Dupuy Jamain	1868	Jamain	Bright cerise.
31	11.3	9	E. Y. Teas	1874	E. Verdier	Bright carmine red.
32	11.2	17	Star of Waltham	1875	W. Paul & Son	Carmine violet.
33	11.0	14	Ferdinand de Lesseps	1869	E. Verdier	Shaded crimson.
34	10.7	12	Duke of Teck	1880	Paul & Son	Crimson scarlet.
35	10.5	17	Reynolds Hole	1873	Paul & Son	Deep scarlet maroon.
36	10.2	7	Heinrich Schultheis	1882	Bennett	Delicate pink rose.
37	10.0	9	Fisher Holmes	1865	E. Verdier	Shaded crimson scarlet.
37	10.0	9	Marguerite de St. Amand	1864	Sansal	Clear rosy flesh.
37	10.0	5	Sénateur Vaisse	1859	Guillot	Bright crimson.
37	10.0	5	Violette Bouyer	1881	Lacharme	Tinted white.
38	9.8	12	Madame Victor Verdier	1863	E. Verdier	Clear light crimson.
39	9.5	2	Général Jacqueminot	1853	Rousset	Bright scarlet crimson.
40	9.0	5	Countess of Rosebery	1879	Postans	Carmine rose.
40	9.0	17	Pride of Waltham	1881	W. Paul & Son	Light salmon pink.
41	8.8	8	Duchess of Bedford	1879	Postans	Light scarlet crimson.
42	8.5	13	Charles Darwin	1879	Laxton	Brownish crimson.
42	8.5	7	Prince Camille de Rohan	1861	E. Verdier	Crimson maroon.
43	8.3	15	Queen of Queens	1883	W. Paul & Son	Pale blush pink.
44	8.0	8	Silver Queen	1887	W. Paul & Son	Blush, shaded pink.
45	7.8	10	Madame H. Jamain	1871	Jamain	Pale flesh.
45	7.5	7	Victor Hugo	1884	Schwartz	Bright crimson, shaded.
46	7.3	8	Duchesse de Morny	1863	E. Verdier	Silvery rose.
47	7.2	7	Madame Eugène Verdier	1878	E. Verdier	Light silvery rose.
48	7.0	6	Comte Raimbaud	1867	Rolland	Clear crimson.
49	6.2	3	Comtesse de Serenye	1874	Lacharme	Very pale rose, shaded.
50	5.8	2	Annie Laxton	1872	Laxton	Clear rose.
50	5.8	5	Magna Charta	1876	W. Paul & Son	Bright pink carmine.
50	5.8	5	Rosieriste Jacobs	1880	Ducher	Dark velvety red.
51	5.5	6	Auguste Rigotard	1871	Schwartz	Cherry red.
52	5.3	3	Lord Macaulay	1863	W. Paul & Son	Bright crimson, shaded.
52	5.3	15	Pierre Notting	1863	Portemer	Deep crimson violet.
53	5.0	2	Dr. Sewell	1879	Turner	Violet crimson.

TEAS AND NOISETTES.

Position in Present Analysis.	Average Number of Times Shown in the Four Years.	Number of Times Shown in 1889.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	40.4	48	Catherine Mermet	1869	Guillot	Light rosy flesh.
2	38.0	45	Innocente Pirola	1878	Madame Ducher ...	White, slightly shaded.
3	35.9	57	Comtesse de Nadaillac.....	1871	Guillot	Rosy flesh and apricot.
4	33.0	33	The Bride	1885	May	White, tinged lemon.
5	32.3	36	Souvenir d'un Ami	1846	Belot-Defougère ...	Pale rose.
6	32.0	37	Caroline Kuster (N.)	1872	Pernet	Lemon yellow.
7	31.8	35	Souvenir d'Elise Vardon.....	1854	Maréchal	Yellowish rosy cream.
8	31.5	14	Maréchal Niel (N.)	1864	Pradel	Deep golden yellow.
9	31.5	41	Niphetos	1844	Bougère	White.
10	29.5	18	Marie Van Houtte	1871	Ducher	Yellowish white, tinted rose.
11	28.0	38	Madame de Watteville	1883	Guillot	Cream bordered rose.
12	26.7	31	Jean Ducher	1874	Madame Ducher ...	Salmon yellow, shaded peach.
13	23.3	31	Madame Cusin	1881	Guillot	Violet rose.
14	22.0	26	Honourable Edith Gifford	1882	Guillot	Creamy white, shaded flesh.
15	18.8	12	Madame Lambard	1877	Lacharme	Salmon, shaded rose.
16	18.0	19	Madame Bravy	1848	Guillot	White, flushed pale pink.
17	17.8	17	Etoile de Lyon	1881	Guillot	Bright sulphur yellow.
18	17.0	9	Anna Ollivier	1872	Ducher	Pale rosy flesh, shaded buff.
19	15.0	28	Francisca Krüger.....	1879	Nabonnand	Coppery yellow, shaded rose.
20	14.8	12	Rubens	1859	Robert.....	Creamy white.
21	14.0	15	Souvenir de Paul Neyron	1871	Levet	Creamy white, tinted rose.
22	13.7	12	Madame Willermoz	1845	Lacharme	Creamy white.
23	12.8	18	La Boule d'Or	1860	Margottin	Golden yellow.
24	12.5	17	Princess of Wales.....	1882	Bennett	Pale rosy yellow.
25	9.0	9	Ethel Brownlow	1887	A. Dickson & Sons	Pale pink, shaded yellow.
26	8.5	8	Madame Margottin	1866	Guillot	Citron yellow.
27	8.2	8	Madame H. Jamain	1869	Guillot	White, shaded yellow.
28	7.8	4	Devoniensis	1838	Foster	Creamy white.
29	7.0	12	Madame A. Jacquier	1879	Guillot	Light pink, shaded yellow.
30	6.8	6	Jules Finger	1879	Madame Ducher ...	Bronzy rose.
31	6.3	5	Belle Lyonnaise	1869	Levet	Deep lemon.
32	6.0	2	Souvenir de G. Drevet.....	1884	Guillot	Salmon white, shaded pink.
	5.7	4	Perle des Jardins	1874	Levet	Bright straw yellow.

THE CULTURE OF ONIONS FOR GENERAL USE AND EXHIBITION.

It is now about thirty years since Banbury and district became famous for the production of fine Onions. The method of cultivation practised by some of the best growers was to select an elevated piece of ground, and in the month of October to trench three spits deep, working in a good dressing of farmyard manure. The bed would then remain until December, when it would receive a top-dressing of soot; this would be forked or raked in, and the ground made firm early in February, and the seed sown at the same time in drills 10 inches apart, and as soon as the plants were established they were thinned to 8 inches apart.

The beds were never allowed to get dry during the growing season, and received liberal top-dressings of well decayed manure sifted, as also artificial manures of various kinds. I would recommend those who grow for general crop to adopt the same plan as given above, with the exception of the distance in drilling, &c., which should be 6 or 7 inches from drill to drill, the seed sown thinly, and all the plants left, none being pulled.

I now come to our modern or present growers, such as Mr. Wingrove, Rousham Park Gardens; Mr. D. Murray, Culzean Castle; Mr. W. Pope, Highclere Castle; Mr. Wiles, Edgcote Park; Mr. Miller, Rood Ashton Park; Mr. Doherty, Wroxton Abbey; Mr. Bowerman, Hackwood Park; and Mr. N. Kneller of Malshanger Park. The first six named gardeners have grown magnificent bulbs, 16, 17, and upwards of 20 lbs. the dozen, the last two named growers producing this year twelve bulbs weighing 29 and 30 lbs. respectively, the varieties being Rousham Park Hero and Ailsa Craig.

The methods are much alike with these growers. In October the ground is deeply trenched with two layers of good cow manure, and in January a heavy top-dressing of soot and lime, which is well forked in during March. The seed is sown in boxes in a cool vinery or frame about the 1st of February, and when about an inch high pricked out 3 inches apart each way into other boxes, and grown in gentle bottom heat with plenty of air until about 6 inches high, then hardened off and planted into the

beds a foot apart each way. When established the beds are mulched with cow or spent Mushroom bed manure and liberal top-dressings of Cannell's, Deverill's, or Thomson's manures applied in showery weather or well watered in.

The ground, of course, to grow fine Onions should be a strong, stiff black or red loam, it being impossible to grow exhibition bulbs on light soils. Frequent heavy waterings between the rows is absolutely necessary to ensure success.—H. DEVERILL.

RESTORING UNSATISFACTORY VINES.

IN accordance with my promise I send a few lines as to the treatment adopted with my Grape Vines, which have previously been in an unsatisfactory condition, but which are now carrying a heavy crop of fruit, the colour fine, and the berries—according to your high opinion—above the average size. I will commence from the time I took charge of them, which was in August, 1886, when I found the Vines in a weak and exhausted condition, the bunches and berries being very small and their colour red. On examining the foliage I found it very flabby, but the worst of all was many of the shoots which should have been quite ripe and brown were still green. I knew the cause of this laid at the roots, and on examining the border (which is outside) this assumption proved to be correct, for they were very deep down in the border and appeared to be dying in consequence. The only course to remedy this evil was to try and raise the roots to the surface. I therefore decided to partly renew the border, which I did in the month of October. I took out all the old soil, beginning from the foot, until the roots were reached, and then supplied fresh cut turfy loam; and as the filling proceeded a good layer of cow dung was added between the courses of loam, and a fair sprinkling of half-inch bones was applied. Of course, as I filled the border again the greatest care was taken to have all the ends of the roots well in the new soil, and their points were directed upwards, so as they grew they would come to the surface. From the other part of the border I had a good spit taken and applied the same composition with the addition of Burrell's artificial manures.

After all was completed some long litter was spread over the border to throw off the heavy rains. This was removed again in the spring, for I am confident that where Vine borders are allowed to be covered in the summer more evil is caused than good.

The inside treatment I adopted was to give a longer period of rest, therefore they were not started until March, and then an abundance of ventilation was provided at the top both night and day. This was to induce them to break strongly for another season's crop, for I did not expect much this season. My aim was to grow them strongly and encourage as much root-action as possible; I therefore let the young shoots run more freely without pinching. The second year I could see the beneficial results of my labours, as they broke more strongly and showed a crop of fruit; but as good Grapes were wanted I decided to give them another year's partial rest, therefore all the larger portion of the bunches were pinched off, and I am quite sure I am repaid tenfold for my pains. I omitted to mention when I took charge of the Grape Vines they were very subject to shanking, but now I have scarcely a shanked berry, and the wood has that beautiful brown and ripe appearance that they seem certain to carry an excellent crop another year.—ALFRED BISHOP, *Westley Hall Gardens, Bury St. Edmunds.*

PELARGONIUMS AND BEGONIAS AS BEDDING PLANTS.

For many years Pelargoniums have been the reigning beauties of the flower garden. Other rivals have tried to displace them, but until now the necessary essentials have been lacking in each one. Verbenas and Calceolarias have failed to rule, although they both possess much beauty, and even the few years that carpet bedding held the sway appear only to have increased our fondness for the old favourite. Pelargoniums possess a greater power of adaptability than most other plants, so that whether in groups or singly they are always pleasing and worthy of admiration. They have received a great share of the hybridiser's attention, until the favourites of our early days are almost forgotten, except when in some old garden we happen to see a forlorn specimen of Tom Thumb, which recalls to our memory the names of some other varieties. Yes, Tom Thumb and Stella have been replaced by Vesuvius and Henry Jacoby, but amongst the multitudinous varieties now extant it is very questionable whether any will be remembered as long as they have been. It need occasion no wonder that Pelargoniums have been so long honoured when we think of their varied forms and colours. The trusses of bloom stand clear out from the dense foliage, as if eager to do its part to brighten the surroundings, and show the artist's work off as much as possible, while the varieties which are cultivated for their foliage—whether bronze, silver, tricolors, or others—perform their parts in the same way. There is a certainty about Pelargoniums which has much to do with their popularity, so that when planted out they are sure in an ordinary season to fill the space allotted to them in the desired manner. Failures with them are of rare occurrence, and although grown in the same beds where their progenitors grew for years before, they have so far escaped any virulent disease. What may be termed their adaptability to circumstances is well known to all, for as soon as planted in the beds the effect intended to be produced is apparent, probably more so than with any other bedder. The effect also improves until the bed is completely filled, and the operation of taking cuttings has to be performed to prevent overcrowding. After the cuttings are removed, and a genial autumn follows, the beds of Pelargoniums are generally the most satisfactory in the flower garden, even if they are more sombre than some of the other occupants. Their dwarf compact habit of growth prevents the storms from committing great ravages amongst them, while no unsightly stakes show themselves obtrusively in their midst. Altogether they are most useful for furnishing the flower garden, and if only double varieties could be raised that would be as floriferous as single sorts, we might never expect to see a more popular plant.

As it is, perfection has not been reached. This changeful climate of ours plays occasionally sad havoc with the petals, and so we continue introducing every plant that gives promise of greater stability and effect. The one which has gained most popularity of late is the Tuberosa Begonia. Steadily and deservedly it has advanced in favour, and even sceptics, if there were any, must have been convinced, after the account rendered of it last year, that a decided acquisition had been secured. I can remember the first plants of B. Chelsoni being brought into the houses of which I had charge, and how at first we coddled them in the stove until they were drawn up and nearly useless, when we tried and found that they liked cooler treatment better. Soon after, when in "Veitch's" for another situation, in the department presided over by that excellent plant

grower the late Mr. May, I learned to like them in something of the same degree that he did, but at that time few could have predicted such a future for their descendants as they have gained. I think he believed they would eventually eclipse Pelargoniums, and at present they bid fair to do so. The yearly improvement of the different strains makes us wonder what will be the next advance, as those now used for bedding are much better for the purpose than formerly.

No better opportunity could have been afforded us for judging how far they are suited for bedding out purposes than the extremes of this season and last year, and it is well that this test has been applied to them thus early in their history, as those who are called enthusiasts are apt to form hasty opinions from favourable appearances. Last year most satisfactory reports appeared from all quarters, and many who had not grown them were tempted to do so, and those who had them before in many instances increased their numbers. It may be safely stated that in no instance has disappointment been the result, although the cases are many in which the effect they produced was beneath the expectations. Two causes are partly to blame for this result. The weather of last year was favourable for their well doing and unfavourable for Pelargoniums, so that the poor appearance of the one heightened the effect of the other. This season the same result was noticeable, but in a manner directly opposite, the Pelargoniums this time being the favoured ones. Nothing could have been better than their glowing colours during the heat of July.

Besides being deficient in decided effect, which even the upright forms cannot altogether remedy, their lateness in blooming is against their being too extensively planted where earliness is desired. They are essentially autumn flowers, and most charming, but it is doubtful if ever the most careful hybridising will produce a strain with stems sufficiently strong to show the colours so effectively as Pelargoniums. Large-flowered varieties should not be employed so much as some advise, as they are more easily damaged than medium-sized varieties. One strong point in their favour is the easiness with which they can be housed during winter, but in gardens where this has not to be studied so much it would be well to give Pelargoniums still the first place in the flower garden, and rank Begonias with Calceolarias and Verbenas.—M. D.

HOW TO PROCURE RIPE GRAPES IN MARCH.

To accomplish this would appear to many almost an impossibility with Vines planted in inside and outside borders; but having been fortunate enough to secure a cultural commendation from the Royal Horticultural Society for some Grapes shown at their meeting on March 26th this year, I thought that a few practical notes on the cultivation here may be of service. Since receiving the above reward I have been asked by a brother gardener for such notes, and I am granting his request by placing them in the Journal, so valuable to many readers.

The Vines, all Black Hamburg, were planted in a lean-to-house fourteen or fifteen years ago, but were, I believe, not forced so early until I took charge of these gardens four years since. The Vines had been up to that period treated as late, the Grapes generally ripening about the end of June. The Vines being in good condition stood the extra forcing well. The house was started by the middle of November, the Grapes were ripe by the third week in April, and were forced a little earlier each season, this year being ripe at the time above stated.

The practice here is at about the end of July to shorten all the lateral growths back to where they were first stopped, following with a further pruning back to four or five eyes at the end of August, which we consider is a great help to the ripening of the wood. The final pruning back to the last two eyes is performed at the end of September; the Vines are then cleaned, great care being taken in doing this, as often through carelessness many young buds in the old rods and at the base of the laterals are rubbed off, though they are often essential to the early forcing of Grapes. As will be shown later on, the Vines are not barked more than can be avoided, as luckily we are not troubled by mealy bug, that detestable pest on Vines, the only insects being red spider and scale. We wash the rods with a strong solution of Gishurst compound, brushing it well into the wood, especially round the base of the laterals. The woodwork of the house is then washed with strong soapy water, the walls being whitewashed with fresh slaked lime.

Attention is next turned to the inside border, clearing all the refuse and loose soil off the surface, and loosening the top with a fork, taking great care not to break any of the roots, as those on the surface are most valuable and ought to be encouraged. We then give the border a good sprinkling of bone dust or half-inch bones,

and Clay's fertiliser with a little lime and soot added. It is covered with a small layer of good stiff loam. All are forked together, and the border is well watered, repeating the application in the course of a few days, so that we can rely on all parts being thoroughly moistened. We recommend this early watering of the border in preference to leaving it until the house is started, as it induces good root-action before the Vines commence growing. The outside borders are then treated in the same way, although if we can secure a heavy rain on it after being prepared in the course of a week or so we consider this preferable. About the end of October we close the house, and at the same time we make a hotbed outside composed of one-half leaves and the other good heating manure fresh from the stable, made to the depth of about 2 feet, covering the whole with old lights or wooden panels made for that purpose. We do not endeavour to obtain any violent heat, the object aimed at being to protect the border from the cold atmosphere, heavy rains, and snow, and to keep the soil as dry as possible through the winter. About a fortnight after closing the house a little fire heat is provided on dull days and nights, the temperature ranging from 60° by day to 55° at night, rising and falling according to the weather outside. Thus, if there is a sharp frost we should expect the house to be below 55°; if the night was warm above 55°, and if the sun was shining over 60°, &c. The endeavour is to keep the fire heat as far as possible to one temperature, and this, I think, is well worth a little consideration, by young men especially, as I believe the more closely we follow Nature the surer we are of success. The house when started should at all times be kept moist by constantly syringing the walls, staging, and borders, and the rods three times a day, for keeping red spider, thrips, &c., in check is greatly assisted by this in the early part of the season.

As soon as the young growths have reached the stage when on close examination the bunches can be detected, those not having any fruit are at once removed, and now will be seen the advantage of careful cleaning. All those buds not injured will be found useful in producing a crop of fruit as well as forming new laterals. We had a good example of this last year, as from the leading buds not more than an average of four to a rod showed fruit, when after removing all those not showing we were in the end able to obtain a good crop, and strange to say, that although some were colouring when others were in flower and just set, they all finished well. This year the wood all seems in good condition, being well ripened, a sample of which I sent herewith pruned a few days ago. This is not a chance practice, but has been carried out here for the last three years with success. Great care is taken when tying down the laterals, going over them often rather than run the risk of losing one, and to aid this we let the rods hang below the wires 2 or 3 inches, and strain them up tighter later on in the season.

We now come to the setting process. The dry temperature, as practised in many places, is not carried out here, the object we aim at being to keep a warm moist atmosphere, with a little ventilation always on when practicable, and the temperature is raised to 65° by night and 70° by day, drawing the hand lightly down the bunches before syringing in the afternoon. As soon as the majority of the bunches are set we give the inside border a good supply of strong sewage water, raised to a higher temperature than that of the house. On no account after the Vines are started let it be colder, and if we can catch a bright sunny day so much the better, that we can well ventilate, and so allow the ammonia, &c., to escape, which would otherwise do injury to the young foliage; this greatly assists in the stoning. The soil close to the pipes should at all times be kept watered, as dry soil helps to breed insects. As soon as they have finished stoning we again raise the temperature 10°, and give another good watering as advised above. This is sufficient until the Grapes are ripe, only supplying clear water after when required. The hotbed is taken off about the end of March.

In thinning great care is taken to remove all the small berries, as they never finish, and only help to disfigure the bunch. Should red spider appear we at once supply sulphur to the roots, which soon prevents it spreading any further. In conclusion, I trust that any imperfections in these notes will be excused, as I am only a young contributor, and already I feel that some of our large growers disagree with a portion of the above practice; still I should be glad to read their opinions.—W. PALMER, *Thames Ditton House*.

[The wood received is firm, well ripened, and capable of bearing good fruit.]

LAVENDER.

THE interesting and instructive article by Mr. L. Castle on Lavender, p. 193, which appeared in this Journal on Sept. 5th, has created a favourable impression here where the land is of a calcareous nature. Although the distance the chalk lies under the surface varies considerably in different parts of the estate, in some places there is only 1 foot of soil, in others the chalk is not reached

at a less distance than 8 feet. Even at the latter depth the soil is highly impregnated with chalk, as this is largely used by farmers for dressing the land in winter, which then falls to powder by the action of the frost. All the land on this estate is heavily mixed with flints, which assist the percolation of the surface water. From the description of the soil required to grow Lavender well we considered that success might be obtained. Mr. Myers, being a thorough enthusiast in any scheme likely to prove beneficial to his estate, has determined to put the matter to a practical test on the lines of culture laid down by Mr. Castle. The position chosen is one facing south, which is already sheltered on the eastern side by a young Larch plantation, and on the north side it is intended to make a similar plantation, and as this tree grows fast when once established in this soil we do not apprehend any difficulty in sheltering the Lavender. I have therefore set about preparing a stock of plants, which I apprehend will be ready to plant permanently out towards the end of April. Not having stock enough to obtain sufficient divisions of old plants we have taken cuttings from 4 to 6 inches long, the base of each being furnished with partly ripened wood, which will emit roots quicker than the soft green shoots nearer the point of growth. The lower leaves are trimmed off neatly, the cuttings are then dibbled thickly in sandy soil in a cold frame, making each thoroughly firm at the base. The frame will be kept shaded for a short time, and little air will be admitted until callusing takes place, and as soon as new growth is discerned abundance of air will be admitted to keep the plants sturdy. Each one will, no doubt, be lifted with a little ball of soil attached, the base of the frame being prepared for this by placing a layer 2 inches thick of decomposed horse manure, into which the roots will run.

As an experiment we have broken into pieces the remaining old plants, slipping off the branches which consist of two and three twigs that have no roots. These are dibbled firmly in the soil on a west border, first placing a small portion of sand at the bottom of the hole to encourage the rooting process. I daresay a larger stock of plants might be raised from seed, but my experience of this mode of production does not warrant the trial, as a few years since, wishing to obtain a stock of plants for garden growth, I obtained a packet of seed. The plants resulting quickly grew to a good size, but they so varied in character, some lanky, some very bushy, while others were spindly, and scarcely any of them flowered like the true *L. vera*, which I afterwards obtained from cuttings. I am afraid the weeding out process might entail the loss of too much time, and I fancy cuttings may give the best results. After a start is once obtained no doubt dividing the plants is the best plan, even if the growth has become somewhat weakened by age. Perhaps Mr. Castle may have something to say on the question of raising plants from seed, and can he give any information on the distillation of the flowers?—E. MOLYNEUX.

THE GOLD MEDAL FRUIT ESSAY.

HONOURS IN HORTICULTURE.

BEING unable to answer all the letters I receive on this subject, I should like to thank my correspondents for their kind expressions, and to state in answer to many inquiries that the above mentioned essay is being prepared for publication in the cheapest form the cost of production will allow. It belongs to the Fruiterers' Company, and their object is not to derive profit by it, but to disseminate information on fruit culture amongst cottagers and small holders of land. The pamphlet cannot be ready for a few weeks because of the time that is necessarily involved in the preparation of engravings from sketches that were introduced for the purpose of elucidation.

The kind words of some of the competitors for the prize are especially appreciated, and it may, perhaps, be well to state that not a line of my handwriting appeared in the essay sent in, and the Judges were not a little astonished when they found to whom they had awarded the prize. I should like to add that I shall not consider it well won if the small work does not prove useful. The medal is the more valued in being a *fac simile* in design of one granted to Dr. Hogg by the Pomological Society of France on the production of the last edition of the "Fruit Manual."

I am fully conscious there are many volumes on horticultural subjects that have been published during recent years far more entitled to distinction than mine can be, but the Royal Horticultural Society bestows most of its medals, and some very worthily, on tradesmen for advertising their goods, though a welcome departure was made this year in the bestowal of a very handsome one to Mr. Barron for services in horticulture; and a gold Knightian medal was on a previous occasion awarded to Dr. Hogg for his classification of Apples. The Veitch Memorial medals are awarded for "exhibits," most of them worthy of their kind no doubt, but all

of them have not been by any means deserving of such a prize. If I am correctly informed, one of these medals has been "won" with plants bought for the purpose, not from Messrs. Veitch, but from another nursery. They were pointed out to me at a show by a person who stated he assisted to pack them for the purchaser.

As it is extremely unlikely that I shall compete again in a literary or any other contest for a prize, I am free to express my opinion that the whole of the honours indicated should not be granted for something staged at a show, but a reasonable proportion should be bestowed on persons who deserve some tangible recognition for long and able services rendered to horticulture, either in private or public gardens, nurseries, societies, or through the agency of the press. Some of the hardest and most indefatigable workers have no opportunities for winning prizes for products at exhibitions, yet they have done far more in expanding the industry of horticulture, creating a taste for gardening, and promoting high culture than have half of the showmen to whom medals are almost exclusively awarded. Surely fitting recipients might be found yearly for at least one each of the honours at the disposal of the Royal Horticultural Society and the Veitch Memorial Trustees for work well done outside the show room or tent. There can be no difficulty in finding men who are deserving of recognition in the form suggested, and exhibitors of produce could still have the share to which they are fairly entitled. I trust the matter will be considered by the authorities.—J. WRIGHT.

STORING GLADIOLUS GANDAVENSIS.

FROM this time forward those who have valuable collections will be seriously considering the lifting and storing. Lemoine's new hybrids are said to be "hardy," and it will presumably be urged they may be left out during the winter months without risk. The few of them I have grown, for convenience in replanting the beds, and for the reason that I maintain the drying and storing is the completion of the ripening process, I have always lifted with the hybrids of *G. gandavensis*. Perhaps you would invite the opinion of some correspondent who has grown and left out during the winter Lemoine's hybrids of *G. purpurea*.

I have frequently, by design and by accident, left corms in the beds; for instance, Claribel and Berthe Roubardin in the same position unstirred for three successive years, and they seemed to degenerate, besides having the tops of the flag-like foliage always turned back in spring. They were too deep in the ground for frost to reach them; I therefore come to the conclusion that except in avoiding the trouble of lifting and storing, nothing is gained by leaving hybrids of *G. gandavensis* over winter in the beds or open ground. I note this, as the point has been frequently urged. None of the large trade growers, from Messrs. Kelway & Son of Somerset, where the winter might be supposed to be comparatively mild, to Mr. Burrell of Cambridge, or thence to Mr. Campbell of Gourock, N.B., think of doing it; and the same is true of Ireland, north and south. For convenience I may refer to the system of storing in connection with the method of growth.

GROWN IN POTS.—I gather from various correspondents that many amateurs, especially in towns, have grown Gladioli in pots this year. They look very effective, raising up from a bank of Ferns or foliage plants in a conservatory, and when so utilised will, as a rule, be withered by this time. There are some late-flowering varieties, such as Duchess of Edinburgh, James McIntosh, Reine Blanche, Asmodeus, &c., that may not have bloomed even yet, though for the first time the first-named has this year bloomed finely for me in September. I have often had them cut down by frost, blooming the first week in December. If pots are plentiful and space no consideration, those that have bloomed and been outside maturing for some time, presumably duly attended to with water, may now be stowed away in any shed or dry place for the winter. They will turn out in capital condition for planting at the beginning of next March. If they should be kept in the least moist growth will commence long before the time for planting or even potting, and Gladioli can, as a rule, be very badly either repotted or transplanted, owing to the extremely brittle roots or rootlets. In nine cases out of ten they will be shaken out and stored in paper bags or boxes if properly matured and dry. If not withered I like to surround them with moist sand, stem and corm, and let them slowly dry out—that is to say, if the pots might be otherwise wanting.

THE SPAWN.—I just digress for a moment to say that at lifting or shaking out some of the young "spawn" at the base will be lost if not looked after, and it is often very desirable in expensive or scarce varieties to use those cormlets in propagation, especially when they are shy in production. For instance, Calliphon, James Kelway, Mr. Thornton, and Samuel Jennings have been certificated and in commerce some years, and owing to producing "spawn" so

sparingly are still selling at from 3s. to 5s. each, instead of the customary 6d. or 1s.; if they could be increased rapidly by "spawn."

GROWN IN BEDS AND BORDERS.—Nothing is gained by leaving the corms outdoors when it is seen they are ripe and matured. On the contrary, varieties that flowered in July or August, having died down early in a mild autumn, I have known to recommence growth in October and November. That growth cannot be utilised, and simply exhausts the corm, leaving only a very doubtful chance of bloom afterwards. Some, especially of the white and purple varieties, such as of the former, Shakespeare, Dumortier, Dido, Mrs. Reynolds Hole; and purples, M. Chaviere, Phidias, Petrarch, and Lord Digby, show a delicate constitution, and if left in cold, wet, and sodden soil will be likely to decay. Admitting that blooming is past, and, as is always possible from this forward, that frost threatens, lift stem, roots, and all, leaving any soil that may be attached; place them thinly against a wall, partition, or improvised arrangement in a dry open shed or house, and if air circulates freely through them so much the better. Those that show shades of green, and that are manifestly not ripe, should have a layer of moist sand placed at the base, and the corms allowed to slowly dry out. The labels, always a difficulty, may remain tied to the stems; and there, if no good reason interposes, they may remain until planting time arrives. I have removed the cream of my collection to a new town garden, and am agreeably surprised to find they have, without exception, all done admirably.—W. J. MURPHY, Clonmel.

THE BEST TIME TO DIG.

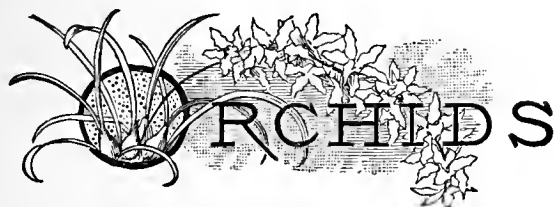
IT is the practice of many gardeners, and is often recommended in calendars, to turn up all vacant ground during the autumn to the action of frost and snow. That no ill effects follow in some cases I am prepared to admit, but these are more the exception than the rule. It is on light and gravelly soils that no injury follows, but on heavy or clay soils autumn digging is positively injurious. We do not attempt to turn up any soil until after the end of January, and then only during fine weather, when we have all hands at the work. By this means we secure a greater depth of pulverised soil. When autumn digging is practised a fine surface of about 2 inches is all that is insured, the under soil being wet and cloggy. If anyone doubts it let a piece of ground be turned up in the autumn and another portion at the time I recommend, and it will be plainly seen which turns up the driest. Autumn-dug ground holds the wet in suspension, whilst on undug ground the rain quickly passes away. We clear all ground of spent crops, and also clear off weeds as soon as we can, so as to expose the surface to the atmosphere. Such soils as I have described should also only be dug with steel forks, as by this means the soil is kept well divided. Spades must not be tolerated for digging except on light soils where the soil will not hold together, and these instances are very few. The soil in these gardens is heavy and cold, but by treating in the manner stated we have no difficulty in obtaining a fair depth of pulverised soil in the spring.—A. YOUNG.

BLACK HAMBURGH GRAPES AT DRUMLANRIG.

ACCORDING to some authorities the cultivation of old fashioned high class Black Hamburgh Grapes is almost a lost or unknown art, and there is some truth in their assertions, as the rage for bulk and show has brought many of the coarser varieties of Grapes into prominence. At midsummer and autumn shows, seasons when the Black Hamburgh should be clearing all before it, it is shunned by exhibitors; Alicantes, Gros Colman, Gros Maroc, and even Lady Downe's taking the lead everywhere. In fact, I know instances where the Black Hamburgh was discarded to give place to these more showy varieties, but all who still regard quality as the first point in Grapes have an unlimited affection for the Black Hamburgh with its clean medium-sized superbly flavoured bunches and berries.

Mr. David Thomson of Drumlanrig grows the Black Hamburgh at the present time as well as it was produced at any time; in fact, I am inclined to go further, and say that the crop of this fine Grape I saw at Drumlanrig in the middle of September was never surpassed, and I know all who have witnessed Mr. Thomson's ability as a cultivator will have no hesitation in accepting the estimate I place on them. The division of the house in which they are growing is 60 feet long, 18 feet wide, lean-to, and the rafters are 22 feet in length. The rods are about a yard apart, rather thicker than one's wrist, and they have been fruiting for over a dozen years. I saw the crop before it was cut, as here the Black Hamburgh is the autumn Grape; the bunches were very numerous, some would weigh a little over 5 lbs. each, but the majority, and they were even, would average 4 lbs. The bunches had been thinned to a

nicety, the berries were fully developed, well hammered, jet black, and with a spotless bloom. The wood was brown, but the foliage as green as in July. As I have hinted, we so rarely see this grand old Grape nowadays in the best condition that the instance merits record, and I feel sure if many saw them they would insist on Black Hamburgs being sent to their table until the end of November at least. I should be glad to read an article in the Journal from Mr. Thomson on the Black Hamburg.—A KITCHEN GARDENER.



SATYRIUMS.

IN the culture of these Orchids I pot the tubers in a compost of leaf soil, loam, and silver sand, and when they begin growing I find

the under side of the leaf; it seems almost hopeless to fumigate, and the only remedy that I find of any use is to dip the plants in tobacco water or other insecticide. I have one plant that has not made any top growth for two years, but the pot is full of tubers, or in other words it has made plenty of tubers but no leaves.

I have plants under the name of *Satyrion acuminatum*, *S. aureum*, *S. carneum*, *S. carneum princeps*, *S. corrifolium*, *S. eristomum*, *S. longicolle*, *S. maculatum*, and *S. membranaceum*.—G. W. CUMMINS.

SATYRIUM AURANTIACUM.

WITH regard to the *Satyrion* figured in last week's Journal, I may say that the tubers are either potted or planted out in a cool frame in light soil—peat or leaf mould is preferable—and kept moderately moist until the first leaves appear. After this they require plenty of moisture. They may also be treated like greenhouse Orchids, but such treatment invariably weakens the tubers. During the summer months the plants are kept during hot sunny days half shaded and with plenty of ventilation. After flowering they are more exposed and kept drier until the leaves turn yellow



FIG. 38.—CATTLEYA MISS HARRIS.

it a good plan to add a little live sphagnum to the surface of the soil, and the roots soon take possession of it. They seem to succeed much better in a cold frame than the open air, for in showery weather I have found the water lodge in the crown of the plant and cause the centre to decay. The pots being well drained and the compost light they require plenty of water when growing, and when the leaves begin dying the plants are gradually dried, and when actually at rest they are stored in the cool house away from frost.

Aphides are the worst enemies to the *Satyrion*, and if allowed to remain on they soon spoil the flower spike. The insects attack

in the autumn, when they are quite dry and ultimately stored safe from severe frost in a shed or cold frame until the following spring. Similar treatment is required by the equally pretty and robust species *S. candidum* and *S. odoratissimum*.—G. R.

CATTLEYA MISS HARRIS.

WHEN shown at the Royal Horticultural Society's Orchid Committee meeting on September 17th last, the above named beautiful and interesting hybrid was greatly admired and unanimously awarded a first-class certificate. It was exhibited by Miss Harris

The Grange, Lamberhurst, and was, we understand, raised in the collection of Orchids at that establishment. It is a hybrid between *Cattleya Schilleriana* and *C. Mossiae*, and it is curious to note that though we have several hybrids in the production of which *C. Mossiae* has been employed as one of the parents, that under notice, and another named *C. Whitei*, are the only ones generally known in which *C. Schilleriana* has been concerned. The famed and almost historical *C. exoniensis* was from *C. Mossiae* and *Lælia purpurata*. *C. Manglesi* was from *C. Mossiae* and *C. Loddigesi*, both raised by Mr. Dominy. *C. exoniensis* has also been utilised by Mr. Seden as *C. Fausta* is from that with *C. Loddigesi*, while *C. triophthalma* comes from *C. exoniensis* and *C. superba*.

C. Mossiae is too well known to need description, but *C. Schilleriana* is not so frequently seen, and it may be well to remind readers that it has the habit of *C. Acklandiae*, the flowers being of a peculiarly rich dark hue that has been not inaptly described as "a deep rosy mahogany colour." The tint and markings vary, in some there is a tendency to a distribution of the colour in spots, and the lip is usually beautifully shaded or streaked with a pink margin. It is a Brazilian species flowering in the summer, when the flowers often last on the plant for a month.

In the hybrid *Cattleya Miss Harris* (fig. 38) the chief characteristics of the last named species have been closely reproduced as regards the form of the flowers, but the colouring seems to have been mainly derived from *C. Mossiae*. The sepals and petals are of a soft clear light rosy crimson hue, the lip being an uncommonly deep shade of crimson. It will take its place amongst the best of the *Cattleya* hybrids, and appears to be of good habit and free growth.—L. C.

HARDY PLANTS.

BEDDING VIOLAS.—The summer of 1889 has been most favourable to the free development and flowering of these useful bedding plants, consequently abundance of clean healthy cuttings were obtainable at the right moment, with the result that we have now plenty of healthy plants. It is perhaps not generally known that to get the best possible results from bedding Violas in early spring we must plant in the earliest days of autumn. For obvious reasons, however, the beds or borders destined to accommodate them are not at liberty much before the end of September in the majority of private gardens, and therefore it is impossible to give the Violas the requisite attention before the early days of October, and this of all months in the year, and particularly in those cases where masses of flower are required early in spring, is by far the best. It is just at this time when everything of a tender nature has been placed within doors, and the remnants of summer bedding plants cleared away, that attention must be directed to Tulips, Hyacinths, and the various other bulbous plants which make our gardens gay in spring time, and where such bulbous plants as these exist we have nothing which can equal the bright charming masses of flowers which Violas produce to adorn the surface of the beds, or in other words to serve as a carpet. Beds destined for the reception of Hyacinths and such bulbs will, of course, be well and properly prepared by digging, manuring, and so forth, and therefore specially adapted for Violas, so there will be no need for comment in this direction. As regards planting, a little forethought will prevent the Hyacinths occurring immediately below the Violas. This may be easily regulated by planting at certain distances apart, or if the bulbs are planted with a blunt dibber the marks of the latter may remain on the surface till the Violas are planted, and thereby insure both being in their proper places.

Another item which should receive attention at this time is that of matching the colours in these two groups—i.e., Hyacinths and Violas, avoiding too blues or violets or whites on the same bed, as such will mar the general effect in spring. Where, however, it is intended to employ Violas alone—and these are capable of producing a wonderful array of colour in themselves, and at a very nominal cost—liberal treatment should be adopted. In cases where light sandy soils exist nothing can equal an abundant supply of cow manure direct from the sheds, the moisture it then contains is very helpful in keeping such soils cool, and in such all Violas delight, but with soils of mere retentive nature light manure and leaf soil mixed will be more suitable, working in plenty of sharp grit or burnt ashes from the rubbish fire, all of which will assist in making the soil more readily worked, and the beds prepared no time should be lost in planting. A selection of good varieties are Countess of Hopetown, Jeffrayanum, Pilrig Park, Champion, all whites; Bullion, the best gold; Ardwell Gem, the best canary; True Blue is excellent, very dwarf and free; Archie Grant, a bold violet purple; Mrs. Charles Turner, rich plum; Duchess of Albany, white or mauve; and Elegans, lavender. Any or all of these are very effective in masses, and to which we can

only add the indispensable shades of purple crimson found in Cliveden Purple and Crimson Gem.

HEPATICAS.—These, if a full measure of success be coveted, should be divided and replanted at once. The generally adopted method is that of dividing and replanting in early spring as soon as flowering is completed. It is, however, not a safe plan, although it may be adopted with a fair amount of success provided a showery season follows the operation, and it is here that the risk is run, for too often in spring time when the operation should be carried out we are experiencing dry harsh winds not the least likely to be of service. At the same moment, as it were, the new foliage springs forth, and for these and other reasons these plants are much better divided and replanted in the early autumn months, as they root without any check from the weather, and are sure to develop good flowering crowns for another year, which latter does not always ensue when the operation is performed in spring. Where large old established clumps exist it is best to divide into several pieces and make a small group rather than to allow it to remain in one clump, a greater mass of flower would result twelve months hence by adopting this course. Hepaticas always make a great quantity of fibrous roots, which quickly impoverish the soil, so that in replanting a plentiful supply of manure should be given, also decayed leaf soil and a bushel or so of old mortar rubbish if obtainable will also be welcomed by the plants. Deep digging, too, is of the utmost importance. A partially shaded and somewhat cool, though not sunless spot, suits them well, though I may remark that a quantity of *H. angulosa* is doing well without the slightest shade whatever. This is the most lovely of all, and generally retains its foliage throughout the year, which cannot be said of the forms of *triloba* when exposed to much sun; particularly is this the case when under the influence of a smoky atmosphere. The Double Blue is the most fastidious, and seems to require a moister soil than any other variety.—J. H. E.

WATERCRESS.

I HAVE no doubt that the fresh Cress and other green vegetables which are sold in the streets of our large cities have a considerable and very beneficial effect upon the physical condition of the people. Watercress contains much chloride of sodium, iodide of sulphur also; and if we are to believe all that is told us it is not only pleasant to the taste, but contains very valuable medicinal properties. When it began first to be eaten nobody can say, it was so very long ago. It is cultivated in great quantities in England now, and a few weeks ago I visited what may be called a Watercress farm. Passengers by the London and North-Western Railway from Euston to the north must often have noticed the clean, white-looking baskets filled with fresh green Cress, addressed to Liverpool, Manchester, Oldham, Birmingham, and many other places, and have perhaps wondered, as I did, where it all came from. Watercress is one of the things that bring my childhood back. It grew plentifully on the banks of a clear stream that ran musically through a lovely Kentish meadow at the back of the old home, and many a time have I watched while old companions gathered bunches of the succulent plant. It may have been this memory of early days, as much as the taste of riper years, which induced me to go and see the Watercress growing once again, this time in its cultivated state.

"Watercress, ma'am?" said a railway official. "Why we send tons of it away beautifully fresh every evening. There is often a truckload of it coupled on to an express train for the north, and it arrives at the large markets at Liverpool and Manchester by the early morning in first rate condition, and all ready for sale. If you are interested you had better call at Berkhamstead as you go down, or Watford, or any of those places in Hertfordshire, for it is in that county that the best Watercress is grown on account of the fine springs that are there." Berkhamstead has, indeed, an interest of its own. It was there that William the Norman received the submission of Stigand, the Archbishop of Canterbury; and there that the Abbot of St. Albans stopped the progress of the Conqueror by felling the trees and blocking the road with them, and wresting from William an oath that he would govern the town according to the laws of Edward the Confessor. It is a quiet place now, and very quaint and interesting. The Watercress grows plentifully along the bottom of a valley, and looks beautifully green and clean.

The bed is emptied and cleansed once or twice a year—"washed as if it were a room," we are told—and then refilled with the Cress, which is not sown, but is planted as Strawberry plants are. There is no earth, but a little sand and water, and great care is taken not to let any weeds go in with the Cress. There are planks thrown across the Cress meadows so that the men may be able to reach it without trampling the plants down, though in some places they were standing in water, and so getting in the harvest. They cut the Cress with a sharp knife, and put it in large tins, in which it is well washed and carefully looked over, after which it is packed in baskets and sent off. "Do you grow it all the winter?" "Oh, yes, all the year round; but we have some warm springs which keep it all right during the frosty weather. Our Cress may always be bought, for we so manage the different crops that one follows another." They complained in Berkhamstead that it is difficult to buy a bunch of Cress, for though it grew in the place it was not grown for the in-

habitants, but to be sent away to the wholesale markets of the large towns. The same complaint is made in fruit-growing places. "There is plenty of it, but we cannot get any." Is not that a little too bad, since Watercress and fruit are good for the people everywhere?"—**MARIANNE FARNINGHAM.**—(*Christian World*.)



EVENTS OF THE WEEK.—To-day (Thursday) the Hardy Fruit Show will be opened at the Crystal Palace, Sydenham, and a meeting of the British Fruit Growers' Association will be held at 3 P.M., when Mr. T. Francis Rivers and Mr. J. Wright will read papers, several others also being promised upon interesting subjects. On Monday, October 14th, the National Chrysanthemum Society's General Committee will meet at Anderton's Hotel, Fleet Street. The usual sales will be held during the week by Messrs. Protheroe & Morris and Stevens at the Cheapside and King Street rooms respectively.

— At a general meeting of the **ROYAL HORTICULTURAL SOCIETY**, held on October 8th, in the Drill Hall, London Scottish R.V., James Street, S.W., T. Francis Rivers, Esq., in the chair, the following candidates were elected Fellows—viz., Wm. Allingham, Walter Joseph Baker, G. W. Lonsdale Barraclough, Mrs. Berry, S. Benshie, Henry Bohn, Henry Briscoe-Ironside, J. G. Clabburn, Lady Cunliffe, Philip H. Davis, W. J. Deighton, Charles Foster, Alfred Gorton, H. A. Grindrod, George Halse, N. G. Hill, Hon. Mrs. Egerton Holmes, James Hunter, J. Kennerley Jackson, Edward Egerton Leigh, Miss Lonsdale, Mrs. Lovett, John Mantell, W. E. Martin, J. McMeekin, W. S. Nicholes, W. J. Nutting, Alfred S. Read, Frank Smith, W. Smith, Mrs. Turner, Captain W. H. Tylden-Pattenson, Charles Warner, jun., James Salter Whiter, Mrs. Wright, Edwin G. Wrigley.

— **NATIONAL AURICULA AND PRIMULA SOCIETY, AND NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).**—Mr. J. Douglas writes:—"The annual general meeting of above Societies will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, on Tuesday, October 22nd, 1889, at 4 A.M., by kind permission of the members. The business of the meeting will be the election of Officers and Committee; receiving the Secretary's and Treasurer's reports; the election of Judges for the ensuing year; and other necessary business that may pertain to the annual general meeting. The annual meeting offers a good opportunity for the election of new members. We have lost a few during the past year from various causes, and members of either Society would oblige by proposing any of their friends who contemplate becoming members at that time rather than later in the season."

— **ORCHID NOMENCLATURE COMMITTEE.**—It is proposed that the first meeting be held in the Lindley Library, Royal Horticultural Society, 117, Victoria Street, on Tuesday, October 29th, at 2 P.M. Gentlemen having suggestions to make for the consideration of the Committee, are requested to communicate with Dr. Masters, at the above address.

— **RAINFALL IN SUSSEX.**—The total rainfall at Cuckfield, Sussex, for September was 1.23 inch, being 2.11 inches under the average. The heaviest fall was 0.77 inch on the 24th, rain falling on only seven days. The highest temperature (not strictly shade) was 86° on the 12th, the lowest 32° on the 26th. Mean day temperature 70.2°, mean night ditto 46.1°, mean temperature 58.1, being 0.1 under the average.—**R. INGLIS.**

— **CHANGE OF ADDRESS.**—We are desired to state that the Sphinter Grip Armoured Hose Company, Limited, have removed their offices from No. 63, Fore Street, to No. 9, Moorfields, London, E.C., (adjoining Moorgate Street railway station). We are also advised that the above Company's Patent Hose has been shown at the Paris Exhibition and awarded a bronze medal, a higher distinction than that secured by any other hose entered as an exhibit.

— **OCTOBER ROSES.**—Messrs. J. Jefferies & Son, Royal Nurseries, Cirencester, write:—"We have pleasure in sending you a few Roses. We think for October these are fairly good." They are excellent, and the following are the varieties: Ulrich Brunner, Mrs. John Laing, Henrich Schultheis, Madame Berard, A. K. Williams, Earl of Pembroke,

Marie Verdier, Captain Christy, Marie Baumann, Marie Van Houtte, Black Prince, Charles Lamb, La Frauce, and Alfred Colomb.

— **WASPS.**—I predicted last autumn that the wasps would be numerous this year, and so it has turned out. Similar fine weather occurred this year at the beginning of September as it did in autumn of 1888, which favoured the successful mating of the female wasps, and which will in all likelihood result in a plague of them next summer and autumn. Piles of timber are the best traps now; these near woods only need to be turned over during winter and secure those wasps.—**A. L. B. K.**

— **THE opening meeting of the CARDIFF GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION** was successfully inaugurated on Tuesday, 1st October, by Mr. Pettigrew, who read an excellent and instructive paper entitled "The Vegetable Garden." There was a good gathering of members, amongst whom, as visitors, were Mr. Thomson of Ireland and Thomson of Edinburgh, and Mr. Lewis of Manchester, both gentlemen taking a lively part in the discussion that followed the reading of the paper.

— **HYDRANTS FOR WASHING BUILDINGS.**—On several occasions our public buildings have been cleansed externally by steam fire engines, the force of water ejected from these machines effectually washing off the soot and dirt in a few hours. Owing to the increased pressure of water in many of the London water mains, however, this kind of work can also be done by hydrants and hosepipes. The latter experiment has been tried with success at the Royal Exchange, where a Merryweather hydrant with the necessary adjuncts has been permanently erected. The apparatus is easily worked by one man, and as soon as a cleansing is required, the apparatus is at once put in action.

— **YUCCA ALOIFOLIA VARIEGATA.**—A correspondent who has flowered the *Yucca aloifolia variegata* inquires if anyone else has had it in flower. A plant has flowered at Cyfarthfa Castle, South Wales, this summer. The plant in question was about 9 feet high, and as rather more than half of the stem was without leaves I decided on having it "ringed" last January. It rooted freely into a 7-inch pot. When it was severed from the stem I am unable to say, as I left that place in March. My foreman, however, who corresponds with some of the young men at Cyfarthfa tells me that the plant has flowered this summer, and was much admired. The ringing ordeal may have had something to do with its flowering.—**J. JEFFREY, Caversham Park.**

— **IN the Journal of Horticulture** of October 3rd Mr. Wright, in his interesting and valuable article on "THE FOOD OF VEGETABLES," mentions Mr. Divers curing a Peach tree of yellows with iron sulphate. I should esteem it a favour if the details could be given in the Journal as early as convenient. I have one or two excellent Peach trees that are not in a satisfactory condition. I intend partly lifting in a week or ten days. I should also be pleased if Mr. Divers or any other reader would give me information respecting the fruitfulness and hardiness of the two following Peaches, Lord Palmerston and Reine des Vergers. Would they make companions for *Violette Hâtive*, *Late Admirable*, and *Walburton Admirable*?—**T. WELCH.**

— **AS you very kindly published a note on a house of TOMATOES HAM GREEN FAVOURITE** we had growing here at that time (see Journal, August 8th), I thought perhaps you may be interested to know that the twenty-five plants have produced 383 lbs. of fruit. The plants were grown on a slate stage, the soil being 2 feet 8 inches wide, and 6 inches deep. They were grown as single cordons. They were bearing freely when they were taken out; but I was compelled to have them removed as I wanted the house for other plants. I have simply sent you this as most of my gardening friends consider it an extraordinary crop grown under the above conditions. I see the variety has obtained two certificates at the Vegetable Conference.—**E. F. CROCKER.**

— **DOUBLE PRIMULAS.**—Herewith I send a sample of double Primulas with names attached. Are there any better varieties? Cut flowers being largely demanded we make these a sheet-anchor for winter and early spring. We have at the present time some 540 plants, including some of the old Double White, which is not to be despised. Whether the Lady and Marchioness be distinct or not I cannot say, for sometimes one takes the character of the other. Be that as it may, both are good. Compared to these the singles are not "in it."—**H. SHAW, The Gardens, Oakworth House, Keighley.** [We have never seen better examples of culture, and the Lady is the best double white Primula that has come under our notice. Good plants are worth exhibiting before the Royal Horticultural Society, the last-named variety for a certificate.]

— WE regret to have to record the death of two gardeners well known in the neighbourhood of London—namely, MR. W. HALL, of Tulse Hill, and MR. FRASER, formerly gardener to Mr. Measures at Streatham, and lately in charge of Mr. White's collection of Orchids at Arddarroek House, Gourock, N.B. Mr. Hall was on a visit to Arddarroek on Saturday, September 28th, and went upon the yacht Osprey with Mr. Fraser, when a steamer leaving Kilmun for Gourock at eight o'clock came into collision with the yacht, causing it to sink instantly, Mr. Hall and Mr. Fraser, with another man, being drowned. Mr. Hall has been a successful exhibitor of Chrysanthemums, and has for many years been the esteemed Hon. Secretary of the Brixton Chrysanthemum Society, but of late years he has been chiefly engaged in the culture of Orchids.

— MR. J. MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS., SEPTEMBER, 1889:—Mean temperature of month, 57.4°. Maximum on the 11th, 73.3°; minimum on the 18th, 31.5°. Max. in sun on the 6th, 125.5°; min. on the grass on the 23rd, 24.0°. Mean temperature of air at 9 A.M., 55.4°; mean temperature of soil 1 foot deep, 56.7°. Number of nights below 32°, in shade one, on grass six. Total duration of sunshine in month, 102 hours, or 27 per cent. of possible duration. We had four sunless days. Total rainfall, 1.43 inch. Rain fell on fifteen days. Average velocity of wind, 7.9 miles per hour. Velocity exceeded 400 miles on two days, and fell short of 100 miles on four days. Approximate averages for September:—Mean temperature, 55.8°; rainfall, 2.51 inches; sunshine, 107 hours. A dry month except for one heavy fall; other conditions about the average.

— GOOD THINGS FOR THE GARDEN.—Being strongly of the opinion that good things cannot be too widely known, I am sure you will pardon my anxiety to bring before the notice of the readers of your Journal the excellent qualities of Sutton's Little Gem Cabbage, which, if sown in April, will be fit to eat by the end of August or early in September. It is the earliest and most delicate flavoured Cabbage I know, and as a gardening friend of mine said the other day, you can suck it through a quill when cooked. Being small, as the name denotes, it can be planted 1 foot apart each way, thus giving as much produce from a given space as though planted with a larger kind, but with this great advantage, that the one is fit for a nobleman's table, whilst the other is more useful for pigs. It is equally good for autumn sowing, and should be grown by all in search of a gem for the garden.—J. HUGHES, *Edgbaston, Birmingham*.

— I SEND you samples of the CARNATIONS from plants struck last year, and which have given us quantities of blooms for at least three months. The one named Miss A. Porter was among others secured in a purchase of unbloomed seedlings from Mr. Turner, Slough, by Mr. Porter of Kingsclere, which has established itself a general favourite. I should be glad of your opinion of it, and the description of its colour. Miss Porter's name was given it by their gardener, Mr. Norris, it being her especial favourite. The blooms sent are less than half the size of the first blooms that expand. It is of free habit, and an abundant bloomer.—W. STRUGNELL. [The blooms received are excellent—large, bright, and pure in colour. Miss A. Porter is a capital variety of a deep salmon-pink colour, very clear and good. Gipsy is dark maroon; Colonel Cox a rich scarlet; and Mrs. Oldacre a soft, rosy tint, with a purplish hue. All are good.]

— FRUIT TREES AND CATERPILLARS.—The season is now at hand when we are reminded to take precautions to prevent the ravages of the looper caterpillar tribe, but in too many cases I fear the remedies used were failures. They certainly were in our case, applied at the latter end of October, 1888. The proposed remedies we tried were bands of sacking and Hessian smeared with grease, tar, and carbolic acid, with the result that the caterpillars were as numerous as ever. One thing seems peculiar about the present season, and that is, that fruit such as Apples and Pears is more abundant, and the trees much healthier, in close proximity to large towns. I noticed it first in and near Reading. One lady remarked that they had more fruit than they had for years past. Of course more fruit meant less caterpillars, and on the occasion of the recent Vegetable Conference I noticed the same in the R.H.S. Gardens at Chiswick. The leaves on the Pear and Apple trees showed no sign of the ravages of the caterpillars, and there was a fair crop of fruit; and I noticed the same whole-leaved and healthy appearance in Pear and Apple trees at Brentford and Isleworth. Now, the question is, What was the cause of the immunity of these suburban districts from the attacks of caterpillars, and consequently in many cases a fair crop of fruit?—R. MAHER, *Tatten den Court, Newbury*.

— WE regret to announce the death, at Manila, on July 28th last, of SENOR DON SEBASTIAN VIDAL, Inspector-General of the Philippine Island Forests and Director of the Manila Botanic Garden. He held the post for a considerable period, and was the author of numerous important works on Philippine botany. He paid two visits to this country in his official capacity; a first of two months' duration in the autumn of 1877, and a second of four months' in 1883-84. Both periods were spent at Kew in working up the Philippine flora; and he deposited in the Herbarium a set of no less than 4062 specimens for future reference. His published works are:—"Catalogo metódico de la Plantas Lenosas observadas en la Provincia de Manila," 1880; "Resena de la Flora del Archipiélago Filipino," 1883; "Sinopsis de Familias y Generos de Plantas Lenosas de Filipinas," 1883, with an atlas of 100 folio lithographed plates; "Phanerogamæ Cumingianæ Philippinarum," 1885; and "Revision de Plantas Vasculares Filipinas," 1886. The two latter were the result of his last visit to Kew, and he was assisted in their preparation by Mr. R. A. Rolfe of that establishment. Senor Vidal was the first to investigate the Philippine flora since the time of Blanco (when geographical botany as a science was practically non-existent), and we owe to him, not merely a widely extended knowledge of its constitution, but also the establishment of the fact that the Philippine flora, though substantially Malayan in character, yet presents a number of very important peculiarities.—(*Nature*, October 3rd.)

— THE WEATHER IN SEPTEMBER.—From September the 3rd to the 19th the weather was fine and bright, and good harvest weather. The remainder of the month was changeable, but mostly dull and wet. The frost on the 18th was the first severe one of the season, and injured many of the tender plants but did not kill any of them. Harvest finished in this neighbourhood on September 21st. The wind was northward twenty-one days during the month. Rain fell on twelve days, the greatest daily fall being 1.09 inch on the 23rd, and the total rainfall for the month being 2.28 inches. The barometer was very variable, the highest reading 30.49° on 16th at 9 A.M.; the lowest, 29.55° on 24th at noon. The temperature varied much during the month; the highest in the shade was 79° on the 11th, and the lowest 31° on the 8th; the lowest on the grass 27° on the 18th. A garden spring was running twenty gallons per minute on the 30th. Dahlias, Heliotrope, and other tender plants were in full flower on September 30th.—W. H. DIVERS, *Ketton Hall, Stamford*.

— DISEASED PEAS.—I have not noticed any response to Mr. Pownall's appeal for information as to Peas becoming diseased (see page 195, September 5th), but probably the following may assist him. When I first took charge of these gardens the Peas were affected in the manner described by him, and were of no use whatever. I attributed it to heavy dressings of leaf soil, and this not of a good description, as it had laid in heaps closely together in pits in the vineries. The old refuse heaps described by Mr. Pownall would be something similar. After discontinuing it in the kitchen garden the disease disappeared. I think it is much the best system to burn or "smother" all vegetable refuse, as in this state it is better for the crops. The present has been a wonderful Pea season with us, and indeed for all other kitchen garden crops. A dressing of lime I should say would certainly benefit the Pea ground, as well as a dressing of very fine bone-flour forked in previous to sowing the seed. We apply manure rather heavily for Brussels Sprouts, summer and autumn Cauliflowers, and the following season Peas follow without manuring.—A. YOUNG, *Abberley*.

— BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The first meeting of the autumn session of this Society was held on Tuesday evening, October 1st. The President, Sir Thomas Martineau, occupied the chair. A large number of members were present, including Professor Hillhouse, the Rev. J. A. Williams, Mr. Latham, Councillor E. Butler, Wednesbury, &c. The President spoke of the very great pleasure it gave him to be present on that occasion, and congratulated the members upon the very great progress that had been made during the year. Particularly gratifying was it to note that many valuable books had been added to the library, which was freely used by the members, the average attendance during the year being ninety, which he considered most satisfactory. Altogether he felt that he had every reason to be proud of the little cutting he had assisted to put in during the time of his Mayoralty, little more than three years ago, seeing how quickly it had made roots, thrown out its branches, and thoroughly established itself among the educational institution of the city. The President then briefly introduced Mr. J. Wright, who attended by invitation to read his paper on "The Social, Intellectual, and Professional Position of Gardeners." The paper was pregnant

with good advice to gardeners, old and young, and met with general approbation, evidence of which was to be found in the frequent applause of the members. Professor Hillhouse, after a powerful and congratulatory speech, moved a hearty vote of thanks to Mr. Wright for his paper. This was readily supported by the Rev. J. A. Williams, Mr. Latham, and Mr. Jones, and was unanimously endorsed by every member present. Several new members were elected. A magnificent collection of Tea Roses and Cactus Dahlias was exhibited by the Rev. J. A. Williams of Alderminster.—J. H., *Birmingham*.

CORNUS SPATHI.

SEVERAL beautiful variegated Dogwoods are in cultivation, and the varieties of *Cornus mascula* in particular are favourites in many

it by the Floral Committee. A small branch of the plant is represented in fig. 39, which fairly shows the depth and proportion of variegation, with the size and form of the leaves, but it cannot, of course, convey an idea of the colouring that renders the variety so pleasing. The leaves are 3 inches long by 1½ inch wide, the outer broad but irregular margin being of a rich orange tint, the centre a bright clear green, forming a striking contrast.

The plant is apparently of Continental origin, but will, no doubt, soon find its way into British trade lists of hardy shrubs. It has not yet flowered, and we cannot be certain if it should be called *sanguinea Spathi* or *stolonifera Spathi*. It is, however, a very hardy plant and a good grower. It also keeps its colour well and does not burn.

It has been distributed by L. Spath, nurseryman, Rixdorf, Berlin. However, that is where Messrs. Veitch & Sons first found it, hence its name



FIG. 39.—CORNUS SPATHI

gardens as standards. The silver and gold variegated forms are the best, and when the foliage is well coloured they add materially to the attractions of shrubberies, the tints being clear and bright. A variety of this species that was sent out a few years ago under the name of *aurea elegantissima* has richly coloured leaves and is free in growth. In nurserymen's catalogues *Cornus marginata aurea* and *C. sanguinea variegata* are named, together with a variegated form of *C. sibirica*, which has obtained some notice by reason of its leaves being broader than many other Dogwoods. At the Royal Horticultural Society's meeting on July 23rd of this year, however, Messrs. J. Veitch & Sons of Chelsea exhibited what was then considered to be a variety of *C. sibirica* under the name of *Spathi*, and a first-class certificate was awarded for

CANKER IN FRUIT TREES.

HAVING taken a little interest in the discussion on the cause of canker in fruit trees, and noted the difference of opinion thereon, perhaps my own views may be admissible. Like Mr. J. Wright, in his excellent article at page 237, I have observed the wonderful effects of winter manuring and irrigation with sewage on fruit and other trees. In one year I have seen restored to health and vigour stunted and cankered, and apparently dying trees of an extensive orchard. I have experienced the remarkable difference of the fruits of one variety of both Apples and Pears coming from one nursery, so that in half a dozen specimens each might have been taken for a distinct variety, the cause being the different stocks the varieties were grafted upon. Two instances under my cultivation at present will suffice to illustrate the

point at issue, a Pear and a Mayduke Cherry. Both are cankered; the former is recovering, while the latter, except one leader, is nearly dead. This tree was formerly a fan-trained specimen, but owing to the stealing propensities of the mining population, has been allowed to grow as it will. The stock of the Pear has not the vigour the graft has, and is much less in size. The graft has for some time past been making an effort to establish itself on its own roots, the wood and bark swelling towards the ground, which it has now reached, and I suppose, although no roots are as yet formed, the bark absorbs the sap, the only way I can account for the canker wounds healing. The Cherry tree has been making a stronger effort than the Pear in the same direction, and one of the leaders has established itself on its own roots, which is the only healthy part of the tree. My theory is that, like the infusion of blood from one person or animal to another, success will only be certain when the corpuscles are of the proper size. So with trees, if the vessels of the stock whereby the sap ascends are smaller than those of the graft, sufficient nourishment cannot ascend to keep the tree healthy.—A. L. B. K.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

WHATEVER may have been its effects on agricultural produce, there can be little doubt that the cool and showery weather of August, which so much retarded the operations of the farmer, was highly beneficial to our gardens, and more especially to florists' flowers, while the bright weather of September has also been beneficial in ripening the wood of other things. Roses have largely benefited by it in ripening the wood, and as a consequence I believe most growers of these plants are congratulating themselves on the appearance of their favourite flowers. In giving them directions as to the management, I would again remind my readers that I write, not from the exhibitor's point of view, but from the amateur's, who likes to grow his plants as if he were going to exhibit, but is not troubled by many of the perplexities which worry him who grows for competition.

AURICULAS.—I have never had so few autumnal blooms as this season. There are some kinds, such as *Acme*, which are proverbially prone to do this, but even they have done so very little this year, while the plants in general have that stout and stocky appearance which fills the grower with hopes of a good blooming time next year. It will now be necessary to prepare to place the plants in their winter quarters—*i.e.*, to remove them from their present position facing north to one facing south. Before doing so it will be desirable to go through the collection carefully, examining each pot, stirring the surface of the soil, removing all dead leaves and weeds, brushing off any aphides that may appear on the plants, and carefully removing any woolly aphides from around the collar of the plant. Whether the creature is injurious or not may be a moot point, but it certainly can do no good, and therefore wherever it is detected it should be removed. They will not require much watering now for some months, but at the same time they must not be allowed to get dust dry, and above all things it must be seen that the frames are drip proof. Nothing is so injurious to the Auricula as a drip; even if it does not go into the heart of the plant, and so occasion decay, yet if it falls on the surface of the soil gradually rendering it soddened and sour, the plant gets sickly, and ultimately dies, and, for the same reason, the dislike of the Auricula to damp, it is desirable to give air whenever the weather is at all fine. Where the frames have to move on hinges it will be necessary to be very careful when air is given, for as the angle of fall is then not so sharp there may be a possibility of the water (should it rain) running back through the laps of the glass. At the same time it must be remembered that although not susceptible to frost so far that it will not kill the plants, yet it is very apt to crumple and spoil the bloom, even when it is enshrouded in the heart of the plant; therefore, should early frosts occur, it will be well to be provided with frigidomo or some other material to place on the frames in frosty weather; in a word, be careful, but do not coddle.

CARNATIONS AND PICOTÉES.—Here again one sees the favourable effects of the season. The plants rooted well, and there was but little necessity for artificial watering; the rain came down so plentifully and at such good times that one seldom had to use the watering can. As far as my own small collection is concerned I never had finer layers, with that beautiful bluish green foliage which so delights the heart of the grower. I have just potted mine, and have placed the layers a few in each pot (48's), so that when I pot them in the spring there will be little disturbance, as they merely want separating a little, and the roots need not be at all broken. The compost should be nearly all loam; a little leaf mould and sand or road grit may be added, and when the plants are done they should be placed in a close frame, shaded from the sun for a few days, and then the light may be taken off and plenty of air given, until they, like the Auriculas, are placed in a warm position for the winter. Care must also be taken with them that they do not suffer from damp; this is apt to bring spot on the leaves, which not only disfigures the plant, but is injurious to its health. If there are any dead leaves they should be removed, and the plant kept scrupulously clean.

PANSIES.—Where these are grown in pots it will now be necessary to have the collection safely housed in small pots. I generally adopt the lazy plan of planting out the old roots, and at this season take them up, clear away all the old and long shoots, and then retain a stout and stocky plant. These I place two in a pot, the same as I do with Carnations and Picotées, and then they are very little disturbed when I have to pot them in the spring. I do not venture to grow Pansies in beds,

for in these southern counties it is vanity and vexation of spirit between the loss from drought and the destruction of the blooms by slugs, earwigs, &c., and so I confine myself to Fancy Pansies grown in pots.

GLADIOLUS.—It has been a capital time for these, and how useful and long continued in blooming they are. I began to cut about July 20th, and to-day, October 3rd, have sent in quite a sheaf of really good flowers for a sale of work, &c. It will be desirable now to take up sticks which have been used to support them, and where they have made holes in the ground to close them up so as to prevent water laying at the roots. I find the foliage of my plants assuming a yellowish autumnal hue, which augurs favourably for their ripening, and should we only have a dry October I expect the roots will lift well. I have had fewer casualties than usual amongst the corms, and am very hopeful of a good harvest. Nothing can be done to the beds until the time for lifting comes at the end of November.

ROSES.—This will be a busy month with Rose growers, and before the time for planting comes and alterations have to be made, it may be as well to go through them, cut out the wood that would have to be cut out in the spring, shorten any very long shoots, so as only to have the pruning to do in the spring, when many things press on our notice and demand our care and time. Where there is fear of frost it may be as well to be provided with bracken or such like foliage to place between the branches, but where dwarfs are grown this is a matter of comparatively little moment, especially if they are well protected about the roots.

TULIPS AND RANUNCULUS.—These may be looked over on some wet day to see that they are all right and free from mildew. Tulips and Turban Ranunculuses may be planted, but at present nothing can be done with them.—D., *Deal*.

PEAS—THE SELECTION OF THE FITTEST.

WHILE staying on the Norfolk coast late in last month (September) I often looked with interest at the little carts of vegetables which came into the town once or twice a week, and on one occasion a woman showed me some Peas. The pods were fresh and full, the peas very large, about ten in each pod. I bought some, by the half-peck. "That's Cater's Telephone," said the woman. "Oh, I know the name well," I replied; "Carter of Holborn, London." "Yes, that's he; my husband and I saw it advertised and we sent for some, and we were sore when the packet came down, that little as yer could hold in the holler of yer hand; but he sowed them and sowed them for three years (they cost us 3s. 6d.); and saved them, and then we begun to sell. And they are beautiful; and they come always like that, and they are just as good till the frost comes. And we have a good profit out of them, and sell a lot cheaper than you can buy them in the shops." That was true; the Peas cooked to perfection, vivid green, soft, of delicious flavour, and I think no better Peas could well have been eaten than those sold to me in the street at Cromer, the variety Telephone, raised by a trustful, persevering cottager and her husband.—A. M. B.

TREATMENT OF SOILS AND MANURES.

MR. BISHOP'S quotation from Johnston and Cameron confirms my statement that "the compound commonly called carbonic acid is carbonic dioxide CO₂." The same authority, as quoted, states that "real carbonic acid 'would have' the composition H₂CO₃," not "has" that composition, for such carbonic acid has never been isolated, and has only a theoretical existence. No argument is necessary to prove that CO₂ is an anhydride, for no one disputes it. I did not charge Mr. Bishop with supposing that "carbonic dioxide of the air occupied the whole space;" but I stated in effect that if his theory was correct the stratum of the air in contact with animal life would consist mainly or entirely of carbonic acid, in which animal life is impossible. To make the sentence intelligible to him I ought to have qualified the word "stratum" with some such addition as "lowest," or "in contact with the earth," though it was scarcely necessary, as the context implied that the stratum in question was that in which in an ordinary atmosphere animals live. I was referring to his astounding doctrine, "this is one of the wise provisions of Nature, so that the carbonic dioxide of the atmosphere (being one of the heaviest vapours we have) falls to the ground."

Small as is the quantity of carbonic acid in the atmosphere, averaging only four volumes in 10,000, it is quite sufficient, if it did really fall through its superior weight to the ground, to make the stratum of air in contact with the ground to consist only of carbonic acid, and be incompatible with animal life.

Mr. Bishop repeats his extraordinary delusion as to the behaviour of mixed gases in his last letter, when again utterly ignoring the recognised law of the diffusion of gases. He asserts, "If the gas were lighter it would all ascend"—that is, the atmosphere, instead of consisting mainly of a mixture of nitrogen, oxygen, and carbonic acid intimately associated, the proportions of each in given quantities only varying in infinitesimal degrees, it would consist of a stratum of carbonic acid in contact with the surface of the earth, above which would lie a stratum of oxygen capped by one of nitrogen. This being a fair sample of Mr. Bishop's scientific teaching quite justifies my strictures on his first article on the treatment of soils and manures. I have not dealt with those which followed, as the first was sufficient for my object of warning such of your readers as had not studied the

nature and properties of artificial manures, not to accept his dicta as to their value in comparison with stable manure without further inquiry or trial. I hope this object is attained; at any rate, I have finished, and shall not prolong a discussion which involves so much repetition, and is so technical that it cannot be interesting to the majority of your readers.—EDMUND TONKS.



JOTTINGS.

THE recent settlement of a *cause célèbre* in the Chrysanthemum world has attracted some attention to certificates, and the rules which regulate these awards. At the present time there are only two bodies of experts who bestow certificates which may claim to possess some official value, and these are the Floral Committees of the Royal Horticultural and National Chrysanthemum Societies respectively. Judges at provincial and other shows frequently award certificates for novelties, and these when signed by well-known competent men are reliable and valued distinctions, still the certificates of one or both of the Societies named add materially to the reputation of any new variety. At both the decisions are taken by voting, the majority for or against determining whether an award be granted or not; but a different procedure is followed when two or more exhibitors show the same variety at the same time. At the Royal Horticultural Society's meetings, when the same species or variety of plant is exhibited by different persons, and it is determined to be worthy of a certificate, the award is made to each exhibitor, and I remember one case (*Angræcum* or *Eranthus Leoni*) when no less than five certificates were granted at one meeting in this way.

The National Chrysanthemum Society adopt a different and, to some extent, a better course. One of the rules of the Floral Committee is to this effect, "In the event of any variety being staged by more than one exhibitor at the same meeting, the whole of the exhibits of that variety shall be submitted simultaneously, and the awards made (if any) shall be made to the exhibit or exhibits staged in the best condition." The result of this is that when, as often happens in the case of the imported French varieties, several examples are staged at one meeting, the best representatives of the variety are selected, and the award is made to these only.

As regards the imported varieties, there can be no doubt this is the best plan, as the same Chrysanthemum may be in the possession of twenty growers, but some difference of opinion exists with regard to sports or seedlings raised here. Instances have occurred where the same sport has occurred in several collections about the same time, or it has been distributed with others before the distinctness was recognised; then each possessor has thought it worthy of a special name, and thus the same variety has been brought before judges or committees under different titles, and it has sometimes been a difficult matter to determine which was entitled to precedence. The rule is that the name first published as officially recognised must be adopted in preference to all others, and after a variety has been thus distinguished it would be unjustifiable for anyone also possessing the variety and knowing they were identical, to bestow another name upon it.

In my opinion the best mode of removing the difficulty would be to require that exhibitors of new varieties should state distinctly whether their plants are imported, or home-raised seedlings, or sports. Then for the imported varieties only one certificate each should be awarded to those considered worthy of it, and, in accordance with the rule now in force, only to the blooms regarded as best representing the variety. For home-raised sports or seedlings certificates should be awarded in all cases where they are sufficiently distinct and in good condition at any meeting during the same session. This would avoid the danger of distributing certificates too freely, as it would be seldom that a sport or seedling could be shown by more than two or three exhibitors in one year. It could not be adopted for imported varieties, as these are frequently in the possession of a score or more of growers, and it would be inconvenient and undesirable to accord certificates to all who like to submit the same variety to the Committee. It appears desirable there should be some alteration in the existing rule, and I make the above suggestion as a possible means of rendering this evidently important matter more satisfactory.

Concerning the decision of the arbitrators in the case referred to, there is a very general opinion that, in the absence of any explanation of the course taken, it is illogical and unfair. It is true that only a portion of the decision was published, and no reason was assigned why, having really given a decision in favour of the defendant, and practically acquitted him of the actions imputed to him, he was yet called upon to pay a portion of the costs of the case. It is not encouraging to litigants to adopt arbitration as a means of settling their disputes, and

is, no doubt, unsatisfactory to both parties. Why such a case should ever have been commenced is a puzzle to many, and had the plaintiff taken the advice of his friends early in the year, he would have saved himself and others a considerable amount of expense and trouble. There are times when it is desirable to call in the aid of the law for the settlement of disputes, but in trade matters generally it is far better to come to some amicable arrangement without having recourse to legal advice.

The announcement of the opening of the public metropolitan shows of Chrysanthemums at the Inner Temple Gardens, Finsbury, Southwark, and other parks indicates the rapid approach of the exhibition season, and intending competitors already begin to count their chances of success. The prospect seems to be a good one, and all concerned with our favourite autumn flower are looking forward to a busy and interesting season. With regard to the metropolitan exhibitions just mentioned, there is every evidence of their fast increasing popularity in the large numbers of persons attracted to them, and there is no question that they perform a useful service in showing the inhabitants of towns what can be accomplished with the Chrysanthemum under unfavourable circumstances. This has become so evident that in several provincial towns the example set in London has been followed, and free public exhibitions provided during October and November.

With regard to length of time and valuable services rendered to the Chrysanthemum cause, the Show at the Inner Temple stands pre-eminent. It is quite an historical affair, and is looked upon as one of the events of the year in the City, and many an annual pilgrimage has been made from a distance to inspect the display and note the varieties. No attempt has ever been made to grow the plants to the highest exhibition standard of excellence, for it is rightly contended that it is better to show the public what a good proportion can fairly expect to attain, than the best results of a specialist's skill, which can only be secured by long experience and constant care. It will therefore be an unwelcome surprise for many to hear that it is rumoured this year will see the last of the Temple Shows, and it is to be hoped that time will prove the rumour is unfounded.

Mr. S. Broome had charge of the Inner Temple Gardens for a number of years. I do not know how many, but the first edition of his little pamphlet on the Chrysanthemum appeared in 1857, and the gardens were then noted for their collection. Mr. Broome died in January, 1870, and was followed in the same year by Mr. John Newton, who has during the nineteen years that have elapsed provided an annual display of much interest, which by the liberality of the Benchers has been thrown open to the public for several weeks during October and November of each year. Hundreds of thousands of people have visited the gardens in that time, and it is impossible to estimate the influence exerted in the popularisation of the Chrysanthemum. Undoubtedly it must have been great, and we shall regret to find that the privilege has been finally withdrawn.

Pedigree Roses have attained some fame in the United States, and now in return our American cousins promise us Pedigree Chrysanthemums, and the first of these is announced under the name of *Ada Spaulding*. This is described as the result of a cross between *Mrs. Wanamaker* and *Puritan*, neither parents being familiar to British growers, and it is said to possess all the good qualities of the best incurred varieties. Indeed Mr. John Thorpe says, "The flower is very large; the base of a bright rosy lilac, turning to pure white. It can rank with *Empress of India*, *Queen Victoria* (*Queen of England*), and *Lord Alcester*." Mr. R. Owen, who is the agent here, however, states, "The colouring is quite novel and distinct; the lower half of a rich deep pink shaded with bright purple rose. The upper half is of the pearliest white, the petals fully one-fourth of an inch wide, and the flower in size surpasses *Princess Teck* or *Jeanne d'Arc*." We must not, however, build our hopes too high, for it is evident the American standard of Chrysanthemum perfection is quite different from our own, judging, at least, by the majority of the varieties that have yet appeared.—L. CASTLE.

CHRYSANTHEMUM LADY T. LAWRENCE.

I HAVE read the letter of Mr. Jameson in your issue of the 26th ult., and your note at the foot of it. I should also be glad to "know the cause or probable cause" of the malformation of the buds of this Chrysanthemum, if it is its usual habit, and if anything can be done to avoid a repetition of this peculiar growth. This is the first year I have grown it, and though my plants are quite healthy in appearance the buds are exactly the same as those described in your note. Two buds out of three on one plant grew in the same manner, the third has not developed sufficiently at present to show whether it will take the same form of growth.—C. J. H.

PUBLIC CHRYSANTHEMUM EXHIBITIONS.

THE ninth annual display of Chrysanthemums in Finsbury Park is now open to the public from 10.30 A.M. till dusk, and will continue daily (including Sundays) to the end of the season.

The Chrysanthemum Show at Southwark Park, S.E., was opened to the public (free of charge) last Wednesday, 9th inst. The Show will be open during the season from 10 A.M. to dusk.

The Inner Temple Show will be opened on November 18th, when the public will be admitted as usual by permission of the Benchers.

CHRYSANTHEMUM EDOUARD AUDIGUIER.

Now that I have my Chrysanthemums housed I find Edouard Audiguier plays me the same old trick; the florets are browning, and going rotten long before the bloom is fully out—in fact, it is only just expanding. I took the precaution to house it early, and it has only had plain water for three weeks, having taken this precaution thinking overfeeding might have done the deed last season. Can any of your readers help me to a solution of the puzzle?—WORDSWORTH.

[The defect is to a large extent constitutional, but the specimens sent are much too gross, the wood soft, unripened, and hollow. The plants have been treated too generously.]

THE CHISWICK CHRYSANTHEMUM CONFERENCE.

A MEETING of the Executive Committee of the Royal Horticultural Society's Conference at Chiswick, which takes place on November 5th and 6th, was held on Tuesday last, October 8th, in the Council room, at the offices, 117, Victoria Street, when the following members were present—Shirley Hibberd, Esq., in the chair, and Messrs. A. F. Barron, L. Castle, N. Davis, J. Douglas, T. B. Haywood, W. Holmes, R. F. Jameson, C. Orchard, C. E. Pearson, G. Paul, H. J. Veitch, J. Wright, W. Wildsmith, and the Rev. W. Wilks. The principal business was forming the committees of selection and determining the manner in which the awards of certificates, as at the Vegetable Conference, should be accorded to exhibits. After some discussion it was decided to classify the varieties as follows, the under-mentioned members of the Committee being appointed to adjudicate in the respective sections. Varieties suitable for outdoor cultivation—Messrs. H. Cannell, W. Wildsmith, and H. M. Pollett. Incurved specimen blooms—Messrs. J. Wright, D. Donald, and W. Mease. Japanese—Messrs. W. Holmes, E. Wills, and R. F. Jameson. Reflexed Anemones, Pompons, and Singles—Messrs. L. Castle, C. Orchard, and N. Davis. Varieties of all classes for named specimens—Messrs. Beckett, Berry, and J. Laing. Varieties suitable for decorative plants—Messrs. C. Herrin, R. Owen, and W. Furze. Referees, or Reserve Committee, were Messrs. H. J. Veitch, E. Molyneux, R. Parker, and H. Payne. The Committees are to meet at 11 A.M., but the Floral Committee also meets at that hour, and all new varieties entered for certificates must be submitted to that body.

MESSRS. JAS. VEITCH & SONS, LANGLEY NURSERY.

CUT in twain by the Slough branch of the Grand Junction Canal, yet is this large nursery of some ninety acres compact in form and full of exceeding interest to all privileged to pass within its gates. Of course I assume that the visitors are persons like myself who are on instruction bent, and privileged indeed is the gardener who has in his earlier years been enabled to become familiar, for some time at least, with the exceedingly admirable and capable manner in which work of all kinds is performed in a first class nursery. Whilst at Langley we find something of everything almost, yet is the nursery chiefly devoted to the culture of fruit stock, and superb stock it is indeed; but a visit for a part of a day to any man who keeps his eyes open is an educational object lesson, the which may serve him in good stead for the rest of his days. The ways of nurserymen may not be mysterious or past finding out, but at least they are severely practical and intensely useful. Work is well done, it is performed on the most modern lines, and with the best rules of practice. It is performed on a large scale with an exceeding variety of subjects, and with perfect order and discipline. Even in the matter of studying the art of getting work well and quickly done a turn in a nursery is full of value, and especially so is it when the study is performed in such a first class school as the Langley Nursery presents. When I called there the other day—chiefly to see the Apples, of which they have had a very good crop, and the fruits generally superb—I could not but remark the numerous varieties of flowers being grown for seed, the capital nature of the strains, all indeed of the very best. The full appearance of the seed yard, literally crowded with stock of various flower and vegetable seed crops, Peas, Beet, and Celery, and noted with exceeding pleasure the great care bestowed upon each variety, and in securing the seed products in the highest condition. Mr. Scott, who manages this establishment for the firm, has everything at the tip of his tongue, and looking at the exceeding variety of subjects which come under his control, it is indeed needful that he should be a sort of human encyclopædia.

A recent and very important addition to the features of the Langley Nursery has been made, for away in one corner of a big meadow beyond the stock yard has been erected some capital low span houses, in which are now deposited that interesting and wondrously varied family of juvenile Orchids of which Mr. Seden is the protective father, guardian, and friend. Mr. Seden, with all his household gods, has been transported from the fogs of Chelsea to the purer air of Langley, a roomy house having been erected for him close to the nursery, in which his numerous and varied family of liliputian Orchids now dwell; not that all are small, for many of the plants are just coming to the flowering size, but there are thousands of mere pigmies in the tiniest of pots, and myriads also of seedlings not even yet transferred from the seed pots, the which, should Mr. Seden be spared, he may hope to see blooming some eight or ten years hence. Well have the Messrs. Veitch & Sons done to remove all this precious and valuable progeny to purer regions than Chelsea presents, for are not all more or less the products of hybridisation? and they may prove to be swans or geese only, but problematically their value must be great indeed. Orchid seed is excessively small. Mr.

Seden shows a Cattleya pod opened containing a mass of what appears to be the finest of pollen grains, but all are seeds none the less, and all are sown, and how? There again is a curious experience manifested, the which a man may be the most expert of growers and yet never hear of. Why, the very best seed bed for these tiny seed particles, these infinitesimal embodiments of some future hundred-guinea hybrids perhaps, is found on the sphagnum which surfaces the 2½ or 3-inch pots, in which myriads of three, four, or five year old seedling plants are growing. In such odd material do these particles germinate far more readily than if sown in pans or pots alone, or in any other fashion.

However, there is a wide interval botanically between Orchids and Apples, and as I went to Langley to see the Apples to Apples must I now revert, and the first thing to say in reference to them is that whilst sparse crops seem to have ruled generally, there appears to have been no lack of fruit at Langley, and if any solution of the great Apple-producing question is needed it seems as if it must of necessity be looked for in the nursery methods of culture, myriads of small trees—bush, pyramid, or trained—planted thickly, and for their dimensions fruiting abundantly. Then, again, as at Langley, Apples seem to come only in their true character when grown in this fashion. The smaller fruits on old or standard trees with which we are generally familiar are here seen in such enlarged, indeed monstrous form, as to be almost unrecognisable, so huge, so superbly developed, and so richly coloured and finished are they. My visit to Langley was made fully a fortnight late, and especially so this season, when the unusual September heat and drought have made the fruits to fall early everywhere. To have got there before any fruits were gathered for the autumn shows would have been a treat indeed, and I hope to experience that joy another year, when notes on Apples may be made with greater exactness. There were plenty of fine samples of the various gathered kinds in the fruit rooms, but the beauty in Apples is never more realised than when seen hanging on the trees, and especially on the young nursery trees, of which there are tens of thousands at Langley in the highest degree of robust healthy growth and setting first spurs in the most remarkable way. Myriads of these trees purchased in October and early in November, planted carefully, and the roots slightly protected with a little mulch of long manure, will carry superb fruits next year. Indeed there should be hardly one Apple tree in growth but what should produce fruits more or less next year, so favourable to fine bud development is the present autumn. There runs right through the nursery at Langley from the Slough side to the Langley end a broad cart-road some third of a mile perhaps in length. That road is bordered on either side by dwarf bush or pyramid trees of Apples, Pears, Cherries, &c., but the whole of one side is occupied by Apples; three trees of every kind, here and there six trees, being planted in rows thickly, and, as far as practicable, the sorts are grouped into families, such as Pearmains, Nonpareils, Pippins, Russets, Codlins, and so on, so that if any one kind be met with its comparative allies are sure to be found close at hand, and thus comparison is more readily instituted.

To have dealt with these myriads of kinds as there prevailed was not possible to me the other day. They could only be dealt with when the whole were fruiting and time was abundant. Certainly when performed—and it needs doing well—the work of comparison of kinds in their sections will be an interesting one. Amongst the Apples which attracted attention the Reinettes came first, and a striking kind was Werder's Reinette, not unlike Court Pendû Plat in form, but finer, with the colour of Bleinheim Pippin, a fine cropper, good keeper, and the tree makes a capital pyramid. The old Golden Reinette, very handsome, cropping freely, and of the finest quality; Reinette du Caux, very handsome, round fruits, striped, of medium size, a splendid dessert variety; Reinette Jaune Hâtive, fruits of rich colour and highly perfumed, ripens in August, was commended as a first-class early dessert sort; Winter Pearmain, in a wonderfully fine form, colouring richly, a very beautiful Apple; Scarlet Pearmain, brilliant in colour, handsome, conical form; Hornead's Pearmain, very handsome, conical, good size and solid, a beautiful fruit, and keeps well, first-class quality; Herefordshire Pearmain, a capital old kind, not commonly met with, good, late keeper; Baumann's Red Winter Reinette, rich red, tree a fine cropper, keeps well, a superior market Apple; Baxter's Pearmain, conical, like fine King of the Pippins, keeps well till March; Balchin's Pearmain has protrusions at the stem like Lemon Pippin, but keeps colour, a fine keeping variety; Adams' Pearmain, well known and good; Lane's Prince Albert, fruiting freely, quite a picture, should be universally grown for market on dwarf trees; Peasgood's Nonesuch, wonderful samples on these small trees; North End Pippin, a handsome and large conical shaped variety; Northern Greening, a fine crop; Early Nonpareil, pretty yellowish round, excellent for dessert; Mrs. Barron, a superb conical Apple, yellowish skin with some colour, a grand variety; American Mother, delicious quality, and good conical form; Margil, fruiting finely and freely; Lord Derby, one of the finest of the Codlin type, and fairly good keeper.

Lord Nelson, not unlike Cellini Pippin, a fine cropper, and wants to be better known; also Nelson Codlin, a moderate growing, free cropping kind, fruit like Lord Suffield, but greener and keeps longer; Lady Henniker, a capital keeping sort; London Pippin, a pretty round variety; the old Lemon Pippin and King of the Pippins, the latter especially wonderfully fine; Jonathan, an American variety for dessert purposes, conical, coloured, handsome, and a free cropper; Withington Fillbasket, a huge fruiter, like Ecklinville, but free from speck; Cornish Gillyflower, very beautiful; Lewis's Incomparable, fine red fruited kind; Winter Hawthornden, fruiting grandly according to statement;

Niton House, a medium sized, handsome, free fruiter, pale lemon in colour, and roundish, a grand cropper; Calville Rouge Précoce, like an intensely red Cellini, a very beautiful Apple; Large American, a big, square-shaped fruit; Cumberland Favourite, large, rich coloured, of the Manx Codlin form, but later and more assured cropper; Domino, now getting a high reputation for its excellent qualities; Hoary Morning, superbly coloured samples; Herefordshire Beefing, also beautifully coloured; Gravenstein of Germany, flattish, striped, free cropper, but distinct from the ordinary early Gravenstein; Gipsy King, a fine, handsome form of Sam Young, but better; Gascoigne's Seedling, rich red, free cropper, should be popular in markets; Egg Apple, true egg shaped, smooth and handsome, fine for dessert, ripe in November; Wellington, fruiting finely and freely, on these young trees a beautiful sample; Devonshire Queen, bright reddish coloured variety, nearest to Hoary Morning, early dessert, and very fine quality; Court of Wick and Downton Pippin, both condemned at the late Apple Conference, but beautiful and capital samples here, delicious quality; Ladies' dessert Apples; Cockle Pippin, very fine and free; Colonel Harbord, fine flattish round fruit, highly russetty, great cropper, and good keeper; Castle Major, flattish, square variety, fine keeper, Cellini Pippin in very beautiful form; Calville Malingre, very handsome, conical fruit, not unlike large Worcester Pearmain; Bismarck, in grand form and colour, a superb Apple for market and general use; Watson's Tyler's Kernel, one of the finest of recently introduced varieties, conical, rich coloured, and a good keeper; Blenheim Pippin, on small trees, carrying wonderful fruit, exploding the theory about planting it for posterity only; Belle Dubois, not Gloria Mundi here, but quite diverse and a fine variety; Belle Du Havre, rich red, flattish round, and very handsome; Barnack Beauty, stem set in small base, reddish striped, a handsome pyramid, and great cropper; Bramley's Seedling, a very great cropper, and a fine late keeper; Betty Geeson, fine; Alfriston, good; Allen's Everlasting, a flattish round, long keeping Apple of good flavour; Annie Elizabeth, Court Pendu Plat, beautiful samples; Paradise Pippin, very early dessert, rich colour, one of the very best for early work; and Lady Lennox, of Hawthornden style, deep green colour, with reddish flush, very fine cropper.

Now this lengthy list must conclude, and yet it represents but a few of the numerous sorts growing at Langley. Enough has been mentioned to show that the Messrs. Veitch have spared no trouble to get together not merely one of the finest, but perhaps the largest and most truly representative collection of Apples to be found in the kingdom. It is expected that shortly, probably early in October, the firm will show a collection of some 250 varieties at the Drill Hall. It will be a remarkable sight, and a matter to be deplored that so few of the public will see them there.* Let us hope that next year, with the aid of the Fruiterers' Company and some other powerful bodies, a really grand show of fruit may be held in London, as, amidst all the talk about hardy fruit culture, the general public sadly want enlightening as to the merits of the wondrous variety of sorts of Apples now in commerce.—D.

THE VEGETABLE CONFERENCE.

THE following is an official list of the certificates awarded by the Jurors at the Chiswick Conference recently:—

GREEN VEGETABLES.

Cabbage.—Ellam's Early, from Mr. J. Willard; Old Nonpareil, from Messrs. J. Carter & Co.; Hâtive d'Etampes, from Messrs. Vilmorin, Andrieux & Co.; Offenbam, from Messrs. J. Harrison & Sons; Hardy Green Colewort, from Messrs. J. Veitch & Sons and Mr. W. Poupart; Rosette Colewort, from Mr. W. Poupart; Early Flat White Drumhead, from Messrs. J. Veitch & Sons; Red Dutch, from Dobbie & Co. and Mr. R. Gilbert.

Savoy.—Early Ulm, from Messrs. J. Veitch & Sons; Dwarf Green Curled, Messrs. J. Veitch & Sons and Mr. W. G. Gilbert; Vertus, from Messrs. J. Veitch & Sons.

Chou de Burghley, from Mr. R. Gilbert.

Borecole.—Extra Dwarf Green Curled and Cottagers' Kale, from Messrs. J. Veitch & Sons.

German Kale.—Dwarf Scotch, from Mr. H. Hanan.

Green Kale.—Dobbie's Selected, from Messrs. Dobbie & Co.

Brussels Sprouts.—Deverill's Large Wroxton, from Mr. H. Deverill; Paris Market, from Messrs. J. Veitch & Sons.

Cauliflower.—Pearl, from Messrs. J. Veitch & Sons; Veitch's Autumn Giant, from Mr. J. Lambert.

Artichoke.—Green Globe, from Mr. J. Lambert.

Spinach.—Vioflay, from Mr. R. Smith; Prickly Seeded, from Mr. W. Poupart.

FRUITS AND PULSE.

Marrow.—Anglo-Indian, from Mr. E. Chadwick; Long White, from Mr. W. Palmer; Moore's Cream, from Messrs. R. Veitch & Son; Hibberd's No. 1, from R.H.S.; Long White Bush, from Messrs. Vilmorin, Andrieux & Co.; Pen-y-Byd, from Mr. J. Muir.

Gourd.—Large Yellow Mammoth, from R.H.S.

Pumpkin.—Rouge de Crimée, from R.H.S.

Squash.—Yokohama, from Messrs. Vilmorin, Andrieux & Co.

Cucumber.—Lockie's Perfection, from Mr. T. Lockie.

Tomato.—Chemin and Mikado (scarlet), from Messrs. Vilmorin,

Andrieux & Co.; Chiswick Hybrid, Advancer, Golden Queen, Tennis Ball, from R.H.S.; Ham Green Favourite, from R.H.S., Mr. R. Dean, and Messrs. J. Veitch & Sons; Golden Queen, from Messrs. J. Veitch and Sons; Perfection, from Mr. W. Poupart and Mr. R. Dean.

Bean (Runner).—Neal's Ne Plus Ultra, from Mr. G. Neal and Mr. H. D. Deverill; Jubilee Runner, from Mr. C. J. Waite; Early Golden Cluster (butter) and Fillbasket (butter), from Messrs. J. Veitch and Sons; Sutton's (butter), from Mr. R. Gilbert; Dwarf Canadian Wonder and Dwarf Mobawk, from Mr. G. Wytbes.

Pea.—Duke of Albany, Telephone, Prodigy, and Sutton's Matchless, from Mr. J. Lambert; Ne Plus Ultra and Carter's Stratagem, from Mr. J. H. Goodacre.

Capsicums.—Golden Queen and Large Bell, from Messrs. Vilmorin, Andrieux & Co.

Maize.—Extra Early Sweet, from Messrs. Vilmorin, Andrieux and Co.

TAP ROOTS.

Parsnips.—Dobbie's Selected Hollow Crown, from Messrs. Dobbie and Co.; Improved Hollow Crown, from Messrs. J. Veitch & Sons; Hollow Crown, from Mr. W. Poupart.

Beet.—Edinburgh Blood Red, from Mr. Hugh Hanan; Dewar's Dwarf Red and Eclipse (Turnip-rooted), from Messrs. J. Veitch & Sons; Dobbie's New Purple, from Messrs. Dobbie & Co.; Dracæna-leaved, from Vilmorin, Andrieux & Co.; Cheltenham Green Top, from Messrs. Harrison & Sons, Mr. W. Poupart, Mr. F. Taylor, and Mr. G. Wythes; Middleton Hall Favourite, from Mr. H. Deverill; Carter's Turnip-rooted, from Messrs. J. Carter & Co.

Carrot.—New Scarlet Improved Short Horn, from The Novelty Seed Company; Early Very Short French Horn, Guérande, Long Red St. Valery, from Messrs. Vilmorin, Andrieux & Co.; Sutton's Gem (Guérande), from Mr. J. Lambert; Sutton's Early Gem (Guérande) and Red Intermediate, from Mr. J. Lye; Long Red Surrey, from Messrs. J. Veitch & Sons; Carter's Scarlet Perfection (St. Valery), from Mr. W. Cbettleburgh.

SALADING.

Celeriac.—Large Smooth Prague, from Messrs. Vilmorin, Andrieux and Co.

Celery.—Wright's Giant, from Messrs. Oakshott & Millard; Dobbie's Invincible, from Messrs. Dobbie & Co.; Sandringham White, from Messrs. J. Veitch & Sons; Sutton's White Gem, from Mr. J. Lye; Aylesbury Prize Red, from Mr. H. Deverill; Standard Bearer, from Mr. F. Taylor; Covent Garden Red, from Mr. W. Poupart.

Chicory (Witloof).—From Messrs. J. Veitch & Sons.

Radish.—Long Scarlet, Early Scarlet Forcing, and Early White Forcing, from Messrs. Vilmorin, Andrieux & Co.

Endive.—Improved Round-leaved Batavian, from Messrs. J. Veitch and Sons; Broad-leaved Batavian, Ruffec, and (Moss Curled) Chicorée Parisienne d'Été, from Messrs. Vilmorin, Andrieux & Co.; Moss Curled, from Messrs. J. Veitch & Sons.

Salsafy.—From Mr. R. Smith.

Lettuce (Cabbage).—Lorhois and Blonde Berlin, from Messrs. J. Veitch & Sons.

Parsley.—Myatt's Curled, from Mr. R. Dean; Dobbie's Selected, from Messrs. Dobbie & Co.

BULBS AND TUBERS.

Leek.—Lyon, from Messrs. Stuart & Mein, Messrs. Dobbie & Co., Mr. J. Lambert, and Messrs. R. Veitch & Son; Musselburgh, from Mr. C. J. Waite and Mr. J. Lambert.

Onions.—Giant Late White Flat Tricoli, Giant Madeira, and Large Blood-red Flat Italian, from Messrs. Vilmorin, Andrieux & Co.; Queen, Brown Globe, and Southport Red Globe, from Messrs. J. Veitch & Sons and R.H.S.; Giant Zittau, from Messrs. R. Veitch & Son, Exeter; Brown Spanish, from Messrs. J. Veitch & Sons; Main Crop, from Mr. Nicholas; Deverill's Improved Wroxton, from Mr. W. Pope; Anglo-Spanish, from Messrs. Oakshott & Millard, Mr. W. Pope, and Mr. Wingrove; Bedfordshire Champion, from Mr. G. Wythes; Flat Yellow or Brown Anglo-Spanish, Pinesfield, Advancer, and Cocoa Nut, from Mr. H. Deverill; Black Douglas, from Mr. H. Deverill and Mr. D. Murray; Rousham Park, from Mr. W. Pope, Mr. C. J. Waite, Mr. Bowerman, and Mr. H. Deverill; Ailsa Craig, from Mr. H. Deverill, Mr. W. Pope, Mr. W. G. Gilbert, Mr. J. Hughes, and Mr. R. Kneller; James' Keeping, from Mr. Muir, R.H.S., and Mr. H. Deverill; Reading, from Mr. J. Hughes; Blood Red, from Messrs. Dobbie & Co.

Shallots.—Large Red, from Messrs. Stuart & Mein.

Garlic.—From Mr. R. Smith.

Turnips.—Early Milan (Red-top), Snowball, Round Red Globe, from Messrs. J. Veitch & Sons; White Stone, from Messrs. J. Veitch & Sons and Mr. J. Lambert; Model White Stone, from Messrs. Dobbie & Co.; Golden Ball, from Messrs. J. Dobbie & Co. and Mr. J. L. Ensor; Early Marvel, from Messrs. Harrison & Sons; Round Red Globe, from Messrs. R. Veitch & Son; Green-top Stone, from Mr. R. Maher.

Kohl Rabi.—Early Vienna, from Messrs. J. Veitch & Sons and Messrs. J. Carter & Co.; purple, from Mr. C. Osman and Messrs. J. Veitch & Sons.

Potatoes.—Reading Russet, from Mr. J. Hughes and Mr. W. Wildsmith; Reading Ruby, from Mr. J. Hughes; Reading Giant, from Mr. J. Lye, Mr. J. Hughes, and Mr. E. S. Wiles; King of Russets, from Mr. J. Lye; Snowdrop, from Mr. E. S. Wiles; London Hero, from Mr. E. S. Wiles and Messrs. R. Veitch & Son; Sutton's Abundance, from Mr. W. Wildsmith, Mr. J. Lambert, and Mr. J. Hughes; Adiron-

* Referred to in the report of the meeting on page 318.

dack, Early Puritan, from Messrs. J. Veitch & Sons; Favourite, from Mr. E. S. Wiles; Veitch's Improved Ashleaf, from Mr. J. Hughes; Wordsley Pride, Epicure, Renown, from Messrs. E. Webb & Sons; Sutton's Seedling, from Mr. J. Lambert and Messrs. Geo. Bunyard and Co.; Prime Minister, from Mr. J. Lambert; Sutton's Abundance, from Mr. J. Lambert and Mr. J. Hughes; Cole's Favourite, from Mr. J. Lambert; Vicar of Laleham, from Messrs. R. Veitch & Son; The Rector, Edgcote Purple, Sutton's Reading Ruby, Prolific, Sutton's Magnum Bonum, Edgcote Early, Edgcote Beauty, from Mr. E. S. Wiles; Hughes' Perfection, from Mr. J. Hughes; Hughes' Pink Perfection, from Mr. J. Hughes; The Dean, Beauty of Hebron, from Mr. J. Lye; Carter's King of Russets, from Messrs. J. Carter & Co.; Chancellor, Webb's Renown, from Mr. J. Lambert.

Potatoes (cooked).—Victory, from Mr. J. Lye; Duchess of Fife, from Mr. J. Hughes; Edgcote Early, from Mr. E. S. Wiles; Talisman, from Mr. C. Ross; Conference, from Mr. R. Dean; The Gentleman, The Cottager, from Mr. R. Maher; Victorious, from Mr. T. Laxton.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 8TH.

THE exhibition of Apples at the meeting held in the Drill Hall, James Street, Victoria Street, on Tuesday last, was an exceedingly fine one, both in the number of the varieties and the excellence of the specimens. Beyond these there were three capital groups of small Conifers, the collection of Retinosporas being probably the best ever shown. Miscellaneous plants and Orchids also furnished attractions, while Mr. Coleman's lecture on Conifers was listened to attentively by a good number of visitors.

FRUIT COMMITTEE.—Present—Sir C. W. Strickland, Bart., in the chair, and Messrs. R. D. Blackmore, Harrison Weir, W. Bates, G. Bunyard, W. Warren, W. Wildsmith, G. Wythes, H. Balderson, G. W. Cummins, F. Q. Lane, J. Cheal, J. T. Saltmarsh, and J. Wright.

A dish of Kane's Seedling Apple was placed on the table from Mr. George Dyke, gardener to H. F. Pocock, Esq., Kirklington Hall, Southwell, understood to have been raised by the vicar of that parish, whose name it bears. The fruit is above medium size, roundish, straw colour, with a delicate flush on the sunny side. It is highly perfumed, with a sweet tender flesh. The Committee, in the absence of information of the character of the tree, did not feel justified in recommending a first-class certificate, but ten members voted that an *award of merit* be recorded for the fruit.

A dish of South Lincoln Beauty Apple, said to be a seedling from Cox's Orange Pippin, and somewhat resembling it in shape, but not at present in flavour, was sent by Messrs. W. & J. Brown, Stamford, and the Committee desired to see it again, also Duncombe Seedling, a late conical Apple, and Toogood's Seedling, sent by the same firm, the latter somewhat resembling Golden Noble.

Messrs. J. & A. Cheal sent a dish of highly coloured fruit of the Forge Apple of Sussex, also cooked fruit. The variety in this bad fruit year is the mainstay of Sussex growers, and the trees are not affected by canker or caterpillars. The Chairman found it equally good in Yorkshire. It is excellent for cooking and cider. It was commended for its hardiness, fertility, and certainty in bearing. The fruits are, as a rule, somewhat small, but would no doubt be larger from young and less heavily cropped trees. It is useful and worthy of trial in different parts of the country.

Messrs. W. Paul & Son, Waltham Cross, sent handsome specimens of Mabbot's Pearmain Apple, and a cultural commendation was unanimously awarded. It has some resemblance to Golden Reinette, but is much more highly coloured. Mr. John Gow, Reading, sent a dish of John Harris Apple, apparently an inferior form of King of the Pippins. It was passed. Mr. Dean, Ealing, sent a Crab to be named. It was regarded simply as a common form of the common Crab.

Mr. Maher, The Gardens, Yattendon Court, Newbury, sent handsome fruits of Golden Perfection Tomato, but they were too ripe and soft for determining the flavour. Mr. Dean sent a bottle of Vegetable Marrow jam, in which the predominating flavour was ginger.

Mr. W. Roupell sent ripe July Frontignan Grapes grown in the open, and a vote of thanks accorded.

Some very extensive and valuable collections of fruit were exhibited, and medals, which they deserved, recommended for them.

The last named gentleman exhibited fifty dishes of Apples grown in his garden at Streatham within the five-mile radius from Charing Cross. Several of the specimens were very fine indeed, and the whole highly commendable (bronze medal).

Messrs. J. & A. Cheal exhibited 170 dishes of Apples and Pears, including enormous examples of Warner's King, Peasgood's Nonesuch, New Hawthornden, Stirling Castle, and many others, amongst which the Forge Apple was prominent by its glowing colour (silver medal). Messrs. James Veitch & Sons exhibited a wonderful assortment of fruit, containing excellent representative dishes of 93 varieties of Pears and 252 of Apples, some of the more prominent varieties being alluded to on another page (silver-gilt medal). Mr. C. Davies, gardener to Lady Howard de Walden, Mote Park Gardens, Maidstone, sent seventy dishes of magnificent Apples and Pears, also large dishes of Grapes, with a dish of Cherries and Currants, and the Committee marked their appreciation of the high culture displayed by the recommendation of a silver-gilt medal.

FLORAL COMMITTEE.—Present—W. Marshall Esq., and Messrs. Shirley Hibberd, R. Dean, W. C. Leach, R. B. Lowe, E. Mawley, T. W. Girdlestone, J. Walker, H. Herbst, B. Wynne, Lewis Castle, W. Holmes, Frank Ross, H. Cannell, C. Noble, and G. Paul.

Messrs. J. Veitch & Sons, Chelsea, had a stand of Rhododendron flowers, comprising several fine varieties, one of which, *Aspasia*, received an award of merit. A plant of *Begonia Prometheus*, a hybrid between *B. Froebeli* and a Tuberous variety, was also shown. The leaves large; the flowers of natural size and bright red. Mr. B. S. Williams, Upper Holloway, exhibited an admirable group of *Sarracenias*, *Crotons*, together with several interesting Orchids, *Oncidium ornithorhynchum* album being notable, as were also some good *Cypripediums* (silver medal). Mr. W. Smythe, The Gardens, Basing Park, Alton, sent sprays of *Jasminum revolutum*, with golden variegated foliage. Mr. R. Dean, Ealing, sent plants of *Pyrethrum uliginosum* in 48-size pots, small compact plants, in flower, that had been raised from layers. Messrs. Hawkins & Bennett, Twickenham, exhibited a stand of a dozen fine blooms of *Chrysanthemum Mrs. Hawkins* (vote of thanks). From the Society's Gardens came several plants of double Balsams (*Vilmorin's strain*); plants of *Liliput Asters* were also shown, small flowers of bright colours, crimson and rose principally.

Messrs. H. Cannell & Sons, Swanley, had an interesting collection of *Chrysanthemum* blooms, comprising good blooms of *Avalanche*, and very large examples of *Etoile de Lyon*. Flowers of *Abutilons* and Tuberous *Begonias* were also sent (vote of thanks).

Mr. G. Wythes, Syon House Gardens, Brentford, exhibited specimens of *Jambosa australis*, a New Holland plant, recommended for culture in pots; the leaves narrow, elliptical; the flowers greenish white with numerous white stamens, the deep crimson fruits being very ornamental.

A group of *Anthuriums* from Sir T. Lawrence, Bart., M.P., occupied a corner of the hall, and edged with small Ferns produced a fine effect, the plants being strong with enormous spathes, *A. Andreanum* and others of that type being principally represented (cultural commendation). These plants have long been well grown at Bedford Lodge, and the award was well merited. Messrs. Davis & Jones, Camberwell, sent a collection of *Chrysanthemums*, comprising grand blooms of *La Vierge* (vote of thanks).

Conifers.—Messrs. J. Veitch & Sons, Chelsea, had a group of choice Conifers in baskets, the specimens being from 2 to 7 feet high and compact, and beautiful examples of the best *Retinosporas*, including the following:—*R. obtusa*, *R. filicoides*, *R. pisifera nana aurea variegata*, *R. plumosa argentea*, *R. tetragona aurea*, *R. squarrosa*, *R. ericoides*, *R. filifera gracilis*, *R. obtusa alba spica*, *R. plumosa aurea*, *R. leptoclada*, *R. obtusa Keteleeri*, *R. filifera*, *R. plumosa flava*, *R. filifera aurea*, *R. plumosa alba picta*, *R. obtusa aurea*, *R. gracilis aurea* and *nana*, *R. lycopodioides*, *R. pisifera*, *R. obtusa pygmaea*, and *R. obtusa pyramidalis* (silver medal). Messrs. W. Paul & Son, Waltham Cross, had a large group of green and variegated Yews (bronze medal), and Messrs. G. Paul & Son, Cheshunt, sent a number of small specimen Conifers in pots, display varieties of Junipers and Cupressus.

ORCHID COMMITTEE.—Present—H. J. Veitch, Esq., and Messrs. J. Douglas, J. Dominy, H. M. Pollett, H. Ballantine, and E. Hill.

Exhibits were not very numerous, but one or two were of an interesting character. From Lord Rothschild, Tring Park (gardener, Mr. Hill), came a raceme of *Vanda coerulea* with eighteen flowers and buds, the former of an exceptionally good shape, and the blue tint finely developed. The plant had been grown in a Cattleya house, and placed right under the ventilators, where of course it was freely exposed to air in fine weather.

FIRST-CLASS CERTIFICATES.

Laelia autumnalis alba (J. Veitch & Sons).—Flowers of medium size, pure white with a slight dash of yellow in the throat of the lip.

Cattleya Hardyana Wrigley's variety (E. G. Wrigley, Esq., Howick House, Preston).—A grand variety, the sepals and petals purple crimson with lighter veins, the lip deep gold at the base, and an intense magenta at the tip, which is undulated, and some of the rich colouring runs down the base of the lip.

Laelia praestans alba (Wm. Bull).—A charming variety, the sepals and petals pure white, the base of the lip also white, the tip rich crimson.

Ceropegia Saundersi (F. Ross).—A botanical certificate was awarded for this peculiar trailing plant, the flowers strangely spotted with green.

Anthurium leodense (Sir T. Lawrence, Bart., M.P.).—A hybrid between *A. Veitchi* and *A. Andreanum*, with spathes 7 inches in diameter by 8 inches long, of a particularly rich shining red colour, the spadix large and white.

Lycaste flava, var. *Cumminsi* (A. H. Smee, Esq.).—A distinct variety, the sepals of a peculiar brownish green colour, the petals white, with a faint tinge of rose in the centre, and a rosy crimson lip.

Cypripedium picturatum (Sir T. Lawrence, Bart., M.P.).—A beautiful variety or hybrid, the dorsal sepal suggestive of *C. Spicerianum*, white with purple and green veins. The petals are greenish at the base, with a few crimson dots, the margin undulated with a few dark hairs, the lip and staminode of purple tint.

AWARD OF MERIT.

Rhododendron Aspasia (J. Veitch, Esq.).—A charming variety, pure clear yellow; the corolla large with rounded lobes, the truss compact.

Chrysanthemum Dorrie (H. Cannell, & Sons).—A rich golden yellow

Japanese variety, with long recurving florets, very handsome, and of good substance.

ALLERTON PRIORY.

ALLERTON PRIORY, the Lancashire residence of J. G. Morris, Esq., is situated about six miles from Liverpool. The house is a fine built structure, designed by Waterhouse, the celebrated architect of the Manchester Town Hall. The grounds have been tastefully laid out, and there are some fine trees of *Sequoia gigantea*, *Araucaria imbricata*, *Quercus*, and *Ilex*. The flower garden looked well, some of the beds being very effective. The kitchen garden appeared to be stocked with useful vegetables. In the orchard the fruit crop is not a heavy one, but the following were bearing satisfactorily:—Apples—Lord Suffield, Cellini, King of Pippins, Cox's Orange; Pears—Williams' Bon Chrétien, Beurré Clairgeau, Beurré d'Amanlis, and Durondeau; Plums—Kirke's, Dennison's Superb, and Magnum Bonum.

The glass houses constitute the chief feature at Allerton, there being some really fine and useful structures, the greater part devoted to fruit. In the early houses the crops were gathered, but the Peach trees and Vines looked clean and healthy. In a vinery where most of the Grapes were cut were hanging several good bunches of Madresfield Court and Black Hamburg, the former being exceptionally fine. Another large span-roof contained good bunches of Black Hamburg and Duchess of Buccleuch; the latter is a Grape that is seldom grown well, but still one of the best for flavour. In the late house were some good samples of Mrs. Pince, Lady Downe's, and Alicante. The Pines and late Peaches looked remarkably fine, as did also the Melons, Cucumbers, and Tomatoes. In the plant houses everything seemed to be perfectly clean and healthy. In the stove were some fine plants of *Ixoras*, *Dipladenias*, *Allamandas*, and *Bougainvilleas*, all in flower.

The greenhouse was bright with colour. *Abutilons*, *Ivy Pelargoniums*, *Liliums*, *Begonias*, and *Fuchsias* were flowering freely. I also noticed several pots of *Torenia Fournieri* in full bloom; it is a graceful plant, of easy culture, and flowers a considerable time. In the fernery were large banks of *Maidenhair* and some fine specimens of *Microlepias*, *Davallias*, *Todeas*, *Adiantum cuneatum*, *A. farleyense* being particularly fine. The houses are heated by two large horizontal tubular boilers; the stokehole is the largest I have seen, and for tidiness is a pattern for any young gardener, as these are generally the most neglected places in a gentleman's garden. The gardener, Mr. Craven, has greatly improved the establishment during the few years he has been there.—W. R.

THE DUTCH HORTICULTURAL SOCIETY.

THE Dutch Horticultural Society has resolved to follow the example of similar societies in England and elsewhere, and to award at its meetings, the dates of which will be fixed beforehand, certificates to growers of products belonging to the vegetable kingdom, plants, vegetables, and fruits which are remarkable for their novelty or exceptional qualities. For this purpose it has formed committees entrusted with the task of examining such products as are submitted to them. One is specially devoted to plants and flowers, another to vegetables and fruits. The third is a scientific committee for the examination of interesting and abnormal peculiarities which may be valuable to botanical science.

Each committee has the right to award first and second-class certificates according to the merits of the products.

The meetings this year were fixed for September 10th, October 23rd, and December 3rd.

It is intended to send after each meeting an extract of the proceedings of every committee.

We enclose with this request the report of the meetings yet held.—W. BARON VAN GOLTSTEIN (*President*), H. C. ZWART (*Secretary*), Amsterdam.

FLORAL COMMITTEE, JUNE 27TH.—First-class certificates awarded to Messrs. Zocher & Co. at Haarlem for a collection of branches and leaves of new or recently introduced trees and shrubs, among which were the *Pinus Strobus zebrina*, *Acer pseudo-platanus atro-purpurea*, *Acer negundo aurea marginata*, *Viburnum Tinus fol. aur. var.*, *Castanea japonica*, and Kelscy's Plum.

To Messrs. Jac. Jurrissen & Son at Naarden for their *Cupressus Lawsoniana Westernmanni* of very remarkable size and colour. To Mr. C. G. Overeynder at Apeldoorn for *Dimorphanthus mandschuricus fol. aur. var. elegans*.

To Messrs. E. H. Krelage and Son at Haarlem for a large collection of cut flowers and bulbs, among which were some *Gladiolus incomparabilis* Madame Blanche Bourdin and Palmyre, and among the *Iris Kämpferi* varieties were Alexander von Humboldt fl.-pl., Rainbow, with pure white flowers, and Princess.

Second-class certificates were given to Messrs. E. H. Krelage & Son at Haarlem for *Albuca Nelsoni*, a novelty introduced in 1886, and for a new variety of the *Iris Kämpferi* W. Cochrane with large and pure white flowers. The same firm also sent a nearly complete collection of the varieties of *Lilium elegans*, and samples of *Allium sphaerocephalum atro-purpureum*, newly introduced in 1888. The Zoological Garden of Rotterdam sent some flowering plants of *Cynoches Loddigesi*, *Cattleya nobilior*, *C. gigas*, and *C. Gaskeliana*.

SCIENTIFIC COMMITTEE, JUNE 27TH.—Messrs. E. H. Krelage and Son at Haarlem submitted to the Committee dormant bulbs of *Fritillaria*

persica. According to a communication of Mr. M. C. Parke, Stretton Hall, Leicester, some bulbs of a species of the *Fritillaria* had started growing again after being dormant for thirteen years. The Committee decided that some of these bulbs should be planted in the Botanical Garden at Amsterdam in order to ascertain how long their rest would last. The same firm sent a branch of *Maclura aurantiaca* which came from Hungary, where that shrub, originally from North America, endures the winter in the open air. Professor de Vries sent specimens of *Dipsacus sylvestris* with distorted stalks in the form of a spire, which abnormal growth had continued during three generations. With the above-named large numbers of plants and flowers with abnormal characteristics were also exhibited.

FLORAL COMMITTEE, SEPTEMBER 10TH.—First-class certificates were awarded to Messrs. E. H. Krelage & Son, Haarlem, for their new plants, *Crocus aurea imperialis* and *Nerine excellens* Moore. To Mr. J. J. Jansen, gardener to Mr. Beckeringh, Driebergen, for his new variety of *Anthurium* with a white spathe. To Mr. J. F. van den Berg, Jutfaas, for a collection of cut flowers of *Tuberous Begonias gigantea* and *gigantea duplex*. To Messrs. Zocher & Co., Haarlem, for a collection of *Tuberous Begonia* with single and double flowers, and to Mr. H. J. van Heyst, Wyk Cy. Duurstede, for an interesting collection of Ferns, grown in the open air. To Messrs. Groenewegen & Co., Amsterdam, for seven varieties of dwarf *Cannas* with large flowers. To Messrs. J. Mater and Son, Leyden, for some plants introduced from Japan.

Second-class certificates were awarded to Messrs. Groenewegen & Co., for four new varieties of *Cactus Dahlias* with gigantic flowers, and for *Chrysanthemum* Mrs. Burrell. To Messrs. E. H. Krelage & Son for a collection of cut flowers from bulbous and tuberous plants. The same firm sent a collection of cut flowers from varieties of *Montbretia* and *Kniphofia*, among which was *Kniphofia aloides grandiflora gigantea* (Krelage). In this collection were cut flowers of *Alstroemeria peruviana* Ostade (Krelage) remarkable for their dark reddish brown colour.

ORNAMENTAL PLANTS COMMITTEE.—A first-class certificate was awarded to Mr. K. Wezelenburg, Hazerswoude, for *Cupressus Lawsoniana filiformis glauca* (Wezelenburg). Second-class certificates were given to Mr. K. Wezelenburg, for the new *Cupressus Lawsoniana*, *Souvenir de Leide*. To Mr. A. M. C. Jongkindt Coninck, Dedemsvaart, for *Cupressus Lawsoniana robusta*, recently brought into the trade, and remarkable for its hardness.

FRUIT COMMITTEE.—A second-class certificate was given to Messrs. Boog & Crans, Elden, near Arnheim, for the Peach Antoinette. This variety is remarkable for its fertility and excellent fruits, and still more for its volume and beautiful colour.

SCIENTIFIC COMMITTEE.—The Botanical Garden of Amsterdam sent a *Reschorneria multiflora*, with a great number of young plants on the inflorescence.

Professor de Vries sent two specimens of *Zea Mais* totally infertile in two generations.

Messrs. Krelage & Son sent some seedling plants of *Agave filifera*, showing very different characters. It is not likely that they are hybrids, while there were no other in the neighbourhood that bore flowers at the same time.—H. C. ZWART, *Secretary*.

PEAR GROWING EXTRAORDINARY.

A WORD or two about one who has risen to some eminence as a grower may not be inopportune. We allude to Mr. James Butler, manager of Mr. A. J. Thomas's Nursery, Orchard Lane, Sittingbourne. The garden, about 4 acres in extent, was formerly a Cherry orchard—one of the oldest plantations in Kent—but it ceased to exist some twenty years ago, when the soil was excavated to a great depth for brick earth. Since then, by good management, the ground has again been brought under cultivation, and it is indeed a fruitful spot, every year seeing crops on the trees of the finest quality. The situation is low and well sheltered, and the soil is good, well-drained loam, resting on a subsoil varying from chalk to a good deep loam—principally the latter. The greater portion of the ground is enclosed by a substantial and lofty brick wall, against which are trained not far short of 200 Pear trees, principally as oblique cordons, the remainder being trained vertically. While Apple trees are studded here and there, the garden itself is principally devoted to the cultivation of Pears, trees of which stand in ranks over the whole place. Here, with a south-west aspect, and aided by extensive supplies of manure, Pears are grown to a high state of perfection. Not only is the fruit large and shapely and of the first quality, but it attains a superb colour; and it is, really, the combination of these qualities which has gained such fame for Mr. Butler's Pears. Over 140 varieties are now in cultivation here, and when the trees are at the height of maturity—although at the time of this visit it should be mentioned that some of the trees had been thinned of the earlier sorts—a unique sight is presented to view. One variety, *Beurré d'Amanlis*, was well represented. The branches were heavily laden with fruit; so much so, that props had to be largely resorted to. Louise Bonne of Jersey, one of the best quality, and on which there is a great run, is another sort largely cultivated at Orchard Lane—dwarf trees of about 4 feet or 5 feet in height, with branches spreading over an area of from 12 feet to 14 feet. Duchesse d'Angoulême next claimed attention. Mr. Butler said, "That's a very valuable dessert Pear, and one that I have been very successful with." Questioned a little further, he said, "Those Pears often fetch 4s. a dozen in the market." "And what quantity of that particular kind of Pear do you send to market during the season?"

"The seasons vary very much," answered our guide, "but I think that I have sent up nearly a thousand bushels during my best seasons." The Windsor, an August Pear, is here grown to perfection. At the time of our visit some of the best specimens were being reserved for exhibition purposes. One or two magnificent clusters caught the eye. There they were, carefully surrounded by a net to protect them from the wind, awaiting the moment when they would be gathered in order to be sent to the metropolis. Beurré Clairgeau, a handsome deep red Pear, shaded to an olive green, and a heavy cropper, is largely grown.

The next variety claiming notice is Pitmaston Duchess, and it is in the cultivation of this superb fruit that Mr. Butler excels. It is one of the best of our dessert Pear trees, and is grown on pyramid and bush trees, the last named reaching a height of from 6 feet to 7 feet. The Pitmaston is a rich mellow Pear of a deep yellow tinge when ripe, the season for which is October and November. It commands a good price in the market, and large quantities are sent from this garden to London, where they realise an average price of 4s. a dozen. The pyramids reach a greater height than the bush trees. While speaking of the Pitmaston Duchess, we found that for three years running Mr. Butler carried off the first prize offered for the six best specimens of Pitmaston Duchess at the Royal Horticultural Society's Show at South Kensington. These exhibitions have now ceased to be held. The specimens shown averaged 22 ozs. apiece. For three years in succession he has taken the first prize of £10 at the Crystal Palace hardy fruit Show in October for the best collection of Pears, staging nearly 100 varieties. "And," said our friend, with a merry twinkle in his eye, "I am going to try to win it this year." Madame Treyve is an immense cropper, and this could be well believed, for the trees of this variety were literally like so many ropes of Pears awaiting the hands of the gatherer. This is a Pear of fine flavour from September to October. Williams' Bon Chrétien is grown to a large size, and as sound as a bell. Doyenné Boussoch, Maréchal de Cour, Doyenné du Comice, Beurré Diel, Beurré Hardy, Brockworth Park, Beurré Bachelier, Durondeau, General Tottleben, Beurré de l'Assomption, Bergamotte d'Esperen, Josephine de Malines, Beurré Bosc, Princess, and hosts of other Pears are also in cultivation. As may be imagined, with such a choice, a large and varied collection for exhibition is easily obtainable.

Apples are not overlooked either. Many trees were well covered with choice fruit, among the leading varieties being Cox's Orange Pippin, Peasgood's Nonesuch, Cox's Pomona, Lord Suffield, Lord Grosvenor (a recent introduction, and similar to Lord Suffield, an Apple that will be better known in the future), The Queen, Worcester Pearmain, Stirling Castle, Lane's Prince Albert, Ecklinville Seedling, Tower of Glamis, and Wellington. These receive careful attention at the Orchard Lane Nursery, and, it is almost invidious to add, are made to produce all that it is possible for a tree to bear.—(*From the East Kent Gazette.*)



FRUIT FORCING.

VINES.—*Early Forced Vines in Pots.*—To have ripe Grapes in March or early April the Vines should not be started later than the early part of November. If bottom heat can be given to start them they will break well. Provided there is a bed of about 3 feet depth and 4 feet width the pots may be raised upon bricks in pillar fashion, so that their rims are slightly higher than the pit edge, and so that the pots will be in the centre of the bed. Leaves being placed in to fill the pit a gentle warmth will be afforded, and the Vine roots will pass into the leaves, deriving beneficial support. The temperature at the roots ought not to exceed 75°, and in the atmosphere 50° to 55° by artificial means, until the buds swell, then gradually increase it to 60° or 65° when they are breaking. The canes should be depressed to a horizontal position to secure their breaking regularly. Damp the house and canes in the morning and afternoon.

Early Forced Planted-out Vines.—Those to be forced to afford ripe Grapes in April should be started by the middle of November. It is not advisable to start permanently planted Vines so early where there is convenience for growing some in pots, as it is a great strain upon the plants to make their growth at the duldest period of the year and to rest at the hottest. The Vines, it is presumed, were pruned about the middle of September and the house kept cool and dry. Protect the outside borders from autumn rains by covering them before the ground is chilled. A good covering of dry leaves, with a little litter to prevent them blowing about, is effective, and if a tarpaulin is employed over all nothing further need be done. Where fermenting materials are available they are a great aid in forcing operations, and especially so for placing inside the house to maintain a genial condition of the atmosphere without recourse to so much fire heat or sprinklings from the syringe. The materials need not be used until the house is closed, but they must be thrown into a heap a week or ten days previously, turned and moistened if necessary. Three parts of Oak or Beech leaves to one of stable litter will give a more suitable warmth and ammonia vapour

than all dung. Mix the leaves well together when thrown into the heap, damping them if dry, turning them when they are getting warm, again damping if necessary, and when well warmed through they are fit for placing in the house.

Late Grapes.—If the Vines were hastened in spring by the aid of fire heat these will be thoroughly ripened, and it is much preferable maintaining a forcing temperature after October comes in to secure the ripening of the fruit. In the latter case the temperature must not be less than 70° to 75° by day and 65° at night, falling 5° through the night, allowing an advance to 80° or 85° from sun heat, continuing this until the Grapes are ripe, at least until the wood is brown and hard. The fruit being thoroughly ripe, in which state only can the Grapes be expected to winter satisfactorily, and the wood be thoroughly matured, all spray or laterals may be removed down to the main buds, ventilating freely on all favourable occasions. Fire heat will then only be necessary to prevent the temperature falling below 50°. To prevent dust settling upon the berries raking or sweeping must not be practised. Mats or clean dry straw laid over the inside borders will to some extent prevent evaporation, assist in keeping the atmosphere dry, and prevent the soil cracking. The outside borders must be covered if the fruit is to keep satisfactorily. Glass lights are best, wooden shutters good, and tarpaulin over dry bracken or straw answers well. A thick thatch of straw or bracken is very serviceable.

Young Vines.—Young Vines generally have a tendency to continue growing to a late period, which may be checked by stopping the shoots moderately, and facilitate the ripening of the wood by a high and dry atmosphere—i.e., a temperature of 70° to 75° by artificial means, and 80° to 85° with sun heat by day, shutting off the heat and keeping the ventilators open by night.

MELONS.—Be careful in the application of water, but the latest plants with fruit swelling must not be allowed to become dry at the roots. Keep up moderate moisture by damping every morning and at closing time, earthing the plants as required. Remove all superfluous growths as they appear, and maintain a temperature of 65° to 70° at night, 70° to 75° by day, up to 85° or 90° with sun heat. Keep the bottom heat at about 80°. Fruit ripening will be the better for a little extra fire heat and ventilation constantly; a dry state at the roots, but not so dry as to cause the leaves to flag, accelerates the ripening process. In dung-heated pits and frames no water will be required after this. Keep the frames well lined, admitting a little air constantly, which with the fruit raised well above the surface of the bed will do much to impart flavour. Any fruit it is wished to keep for a time must be cut when changing with a good portion of stem, and be kept in a dry airy room, or if wanted ripe at once they may be placed in a warm airy house in the full sun, and they ripen better than in frames or pits devoid of artificial heat.

CHERRIES.—If it is intended to plant any trees it should be seen to as soon as the leaves have fallen, or if the trees are at hand those trained to walls for four, or five, or six years are best, and if repeatedly lifted they may be planted as soon as the leaves give indications of falling. The Cherry, like all stone fruits, thrives best in a calcareous soil, turfy loam inclined to be strong rather than light, with a tenth of old mortar rubbish and a sixth of wood scrapings thoroughly incorporated answering well, the border being about 24 inches deep, over 9 inches to a foot of drainage, secured with a layer of old mortar rubbish, and about 6 feet wide, which is ample for trees grown under glass. Black Tartarian and May Duke are the best varieties, but Early Rivers is a welcome addition, and especially valuable for early dishes. The yellow fleshed varieties form an acceptable addition to the dessert when fresh fruit is not plentiful. Early Jaboulay, Elton, and Governor Wood are first-rate; the lights having been removed they need not be replaced for a month or six weeks, the old surface soil being removed without injury to the roots and fresh compost supplied, that above named answering with the addition of a fourth of manure.

Trees in pots to be shifted into a larger size should be attended to at once, and those not to be so treated should be turned out of the pots. Remove a few pinches of soil from the base, cut the roots back and supply fresh loam, adding about a tenth of old mortar rubbish and a sprinkling of half-inch bones with good drainage. Remove the surface soil, supplying the above compost, adding a fourth of decayed manure. Whether for trees planted out or in pots the soil should be made firm. Afford a good watering, and place the trees where they can have plenty of air. If outdoors they may be plunged over the rim of the pots.

THE FLOWER GARDEN.

Propagating Shrubby Calceolarias.—Where large numbers of bedding plants are required these Calceolarias ought to be extensively grown, and they are especially serviceable in places where the convenience for wintering tender plants is of a limited character. All they require is to be kept cool and protected from severe frosts, and they need never be placed in pots or in a heated house at any time. Cuttings ought to be inserted now or before they are damaged by severe frosts. The ordinary garden frames are best for striking and wintering the plants in. These should be placed in a convenient well drained position, raised from the ground with the aid of bricks at each corner, inside being placed a firm layer of half-decayed heating material, nothing being better than leaves and stable manure in equal parts, bringing up the 6 inches of fine loamy soil near to the glass. Face the latter with sharp sand or road grit, and make all firm and level. Select firm short-jointed flowerless tops of young shoots. Cut these to the third or fourth joint, trimming off the lower pair of leaves only, and dibble them in firmly

about 3 inches apart each way, and water through a moderately fine-rose pot. Put on the lights and shade from bright sunshine. When the cuttings are recovered somewhat a little air may be admitted, especially during warm nights; the shading also being gradually withheld. If the cuttings are unduly coddled they will grow and become weakly, whereas the aim should be to keep them dwarf and sturdy.

Violas, Pansies, and Gazanias.—The first named are a beautiful and serviceable class of bedding plants. Pansies are favourites everywhere; and the old-fashioned *Gazania splendens* is also effectively used in some summer bedding arrangements. All strike as readily and thrive under much the same treatment as that above recommended for *Calceolarias*. Young flowerless shoots springing from the centre of the plants of *Violas* and *Pansies* are the best for striking, but the older tops answer nearly as well. These may be taken 2 inches or rather more in length, trimmed to a joint, and dibbled in clear of each other all over the bed. Every cutting will usually strike root and make stocky little plants for transplanting to more roomy quarters next spring. The cuttings of *Gazanias* should be somewhat longer, and will require rather more protection during the winter.

Late Propagated Pelargoniums.—Where no very severe frosts have been experienced the Zonal *Pelargoniums* are unusually gay for the time of year. This is partly the result of the wood being short-jointed and firm, and as this is also the best for propagating purposes there is no reason why more cuttings should not be inserted if need be. In many places it is hardly possible to winter too many of these still popular summer bedding plants, and in any case it is always wise to have more cuttings than needed, a considerable number not unfrequently being lost during the winter. Only the firmest shoots ought to be made into cuttings, these being allowed to lie in the sunshine or light for several hours in order that much superfluous or dangerous sap may be evaporated. Place them rather thickly in small pots, set on shelves in cool houses near the glass, and give only sufficient water to prevent much shrivelling.

Preparing Sites for Bulbs.—Many of the commoner kinds and varieties will usually flower well for one season at any rate if planted in ground not specially prepared for them in any way. The soil in the flower beds is quite good enough for the ordinary bedding kinds, including *Hyacinths*, *Narcissi*, *Tulips*, *Snowdrops*, *Crocuses*, and *Scillas*, the greater portion of which are lifted prior to filling the beds with their summer occupants, and are seldom of much service afterwards. The choicer *Daffodils*, *Narcissi*, *Tulips*, *Anemones*, *Grape and Feather Hyacinths*, *Triteleias*, *Leucojums*, *Irises*, *Jonquils*, *Snowdrops*, *Aconites*, and *Crocuses* generally succeed, however, much the best when planted in well prepared sites, not being disturbed for five years or more. All delight in well manured, deeply dug or trenched ground, with abundance of fresh turfy compost disposed immediately about the bulbs. They will pay well for this treatment, and instead of flowering well the first season only will continue till eventually large clumps will be available for dividing and transplanting.

PLANT HOUSES.

Calceolarias.—To have plants that are rarely attacked by aphides, they must be repotted from time to time, as they need more root-room. If the plants are once neglected in this respect they soon become a prey to these pests. Now that frame room is more abundant we are placing all our largest plants into 6-inch pots, and later plants are being attended to in this respect according to the size they need. These plants will do well in cold frames for some time. They grow rapidly at this season when stood on a cool moist base. On no account remove them to greenhouses and arrange them on shelves or open lattice staging, as such positions are too dry.

Cinerarias.—These plants suffer from damp in cold frames in many localities if crowded thickly together. There is no difficulty in keeping them in these positions for at least another two months if they are arranged thinly so that plenty of air can play about the foliage. Damping occurs when their leaves are allowed to hang wet for several days in succession. The earliest plants producing their flower stems may have weak stimulants every time water is needed. Nothing is better for them than soot water in a clear state. The plants needed for spring flowering are now being placed into 5 and 6-inch pots, and later ones into 4-inch pots.

Primulas.—Plenty of the early plants are now showing flower, and will soon be suitable for decoration if placed indoors where the temperature does not fall below 45° to 50°. A few of these are useful after the third week of this month for associating with other plants in the conservatory, or even for room decoration. Repot all late plants that need it and are to be retained for spring flowering. Admit air liberally during fine days. These plants will be safe in cold frames until the end of the month. They will do afterwards on shelves, or in almost any position, provided they are kept cool. All late flowering plants should be grown as sturdily as possible, and then they will produce strong flower stems in profusion in spring. Keep double varieties in a house where the atmosphere is moderately dry and the temperature not allowed to fall below 50°. Water these with care; if first kept wet and then dry they are almost certain to decay at the "collar." Keep the soil as near an intermediate state of moisture as possible.

Abutilons.—If these are to continue growing and flowering throughout the autumn they must have a night temperature of 50° to 55°, with a day temperature 10° higher. When kept in a cool airy structure the flower buds that form soon turn yellow and fall. The flowers open by the aid of a little warmth, and will continue as long as the plants are growing slowly.

Cyclamens.—If a few plants are wanted in flower place them on a shelf near to the glass where the night temperature ranges from 50° to 55°, and their flowers will soon appear above the foliage. Do not hurry them or keep them in a close confined atmosphere, or the foliage as well as the flowers will be drawn up weakly. Those not required in flower will do for the present in cool houses. Give the plants weak liquid manure occasionally, and keep them near to the glass. If seed has not been sown for next year's supply do so at once. The seeds germinate quickly in a temperature of 60° to 65°, and they should be covered lightly with fine soil, with a square of glass over the pan or pot. After gradually expose the seedlings to light and a cooler temperature. Prick them out singly 1 inch apart into shallow pans or boxes. Do not allow them to become dry, and gradually harden them to an intermediate temperature.

Tea Roses.—If allowed to break into growth under cool treatment these may now have a position where careful ventilation can be provided, with a temperature that will not fall below 55°. Where flowers are wanted by Christmas no time should be lost in pruning the plants. Subject them to the coolest treatment, so that they will enjoy complete rest for a week or two before starting them again. Free the house of aphides before pruning, for they will prove a source of trouble when the foliage is tender. For flowering at Christmas *Safrano* and *Isabella Sprunt* are decidedly the two best. They grow freely and flower profusely.

Hybrid Perpetuals.—Where it is necessary to increase the stock of these pot some at once. If done while the foliage is fresh and plunged outside, the pots will be partially filled with roots before the approach of frost.

Eucharis amazonica.—If the supply of blooms from these is required over a long period during the autumn and winter, those that have completed their growth may be removed to cooler quarters for a few weeks to rest. Do not remove too many plants at one time; select a few of the most promising, and a few more at intervals of ten days or a fortnight according to the time they complete their growth. The rest they enjoy in cool quarters can either be of short or long duration according to circumstances. Those that have first flowered must be pushed into growth, and with good management should flower again in January. With care and judgment in pushing plants forward and retarding others there is no difficulty in having *Eucharises* during the whole of the year, though intervals of a week or fortnight may elapse without blooms even under the best of management, as it is very difficult to time the plants to a few days. Before the plants are removed to cooler quarters allow them to become somewhat drier at their roots, and keep them in this condition until they are returned to the stove. At the same time they must not be allowed to flag or suffer by an insufficient supply of water at their roots.

THE BEE-KEEPER

NOTES ON BEES.

YOUNG QUEENS.

WITHIN the past ten days numerous inquiries have come to hand as to whether I could supply a fertile queen or queens, as one or more of their stocks were either queenless or had virgin queens only. Through the kindness of acquaintances and the surplus from my own stock I have been able to supply a few, but many are still unserved. The dealers are not exhausted, and if those in want of such apply to them they will be supplied at a moderate rate. Although the current year has not been so disastrous as 1878 was many queens are this year unfertilised, especially those that superseded the queen regnant late in July and August. The want of sunshine during these months, but not a high temperature, was conducive to this. It is a good plan at this season for bee-keepers to preserve a few nuclei to replace defective queens either now or whenever drone brood appears out or inside the hive. I have preserved queens for weeks by caging and placing them between the combs amongst the bees. There is no safer plan than this, and the bee-keeper will be studying his own interest if, now they are cheap, he provides himself with a few queens, preserving them in the manner stated above.

INTRODUCING QUEENS.

It is a considerable time since I asked for information regarding the thirty minutes' starving process, what is new, or what is gained by the "Simmins" method of direct introduction, but the desired information has been withheld. My own opinion is, There is nothing new, nor is there anything gained by the method unless it be the thirty minutes' starving process. It is several years since I advised in these pages to keep the queen from eating other honey, than that belonging to the hive to which she was to be introduced,

and no time is gained over the caging system; indeed, there is a positive loss. Queens caged are regularly and sumptuously fed, which brings them into the laying state quicker and safer than the so-called direct method of introducing queens.

CARNIOLIAN QUEENS.

We have been frequently asked where these queens can be procured pure, owing to disappointment in getting cross-bred queens instead of pure ones. I have just received as handsome a Carniolian queen as I ever possessed, accompanied by some of her progeny, truly and purely marked, as a present from a bee-keeper in the West Highlands, who is fortunate in being in an isolated place, so that he will have no difficulty in rearing and supplying a large number of pure Carniolian queens to bee-keepers. I learn from him that he will not breed queens for sale other than in full strength stocks during June and July, so that nothing but queens of the first grade will be sent out. The bees and queen were four days on journey, and arrived in splendid condition although the weather was cold and frosty. His apiary is perhaps the largest in Scotland, comprising about 200 stocks of bees. His advertisement will appear in due course, and from my personal knowledge of him I am sure that nothing but reliable queens will be sent out.

SWARMS LEAVING THEIR OLD QUEEN.

Lately I mentioned a case where a swarm issued from a hive leaving the queen regnant behind and undisturbed owing to the queen that left with the swarm having been blown on to it from an adjoining hive being the second swarm that had issued from it. According to the rule that the old queen always leaves with the first swarm we should have looked for her in it, but when making an examination of this hive the imported queen of October, 1888, was still regnant, although from the absence of eggs during August, and a subsequent dissection proved, she had in a great measure become unfertile; simply another proof of the advisability of at least once in the year giving a young queen to every stock, and where the greatest results are wanted give two.

SWARMING.

Whatever many bee-keepers think, some of them write as if swarms issued from some sudden impulse, and not from any premeditated preparations. The impression is received, and becomes stereotyped on the minds of novices; then to prevent swarming they resort to the inventions of those who appear never to have studied the causes of swarming, hence come disappointments. I have frequently experienced bees being in a state of preparation to swarm for more than a month, stress of weather alone causing them to gnaw the queen cells, and so for a time preventing the swarm issuing. Sometimes the queen regnant was deposed, and a young queen took her place, sometimes with and sometimes without any after swarms, depending altogether upon the weather. The same thing occurs sometimes after the introduction of an alien queen. Queen cells are brought forward; if fine weather prevails the old or newly introduced queen is deposed, but if the weather proves unfavourable the royal cells are destroyed, and she is allowed to reign in peace.

It is indeed a rare thing to find a swarm issuing without making preparations beforehand, the usual time being between eight and ten days. The foregoing will enlighten those who may not have a clear conception of swarming, its causes and prevention.

ENEMIES.

Mice are now seeking for winter quarters, hives being a favourite resort, and bees and honey are food greatly relished. Guard against their inroads, and with a similar assiduity search for defects, and prevent rain passing into the interior of the hive.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- A. M. C. Jongkindt, Coninck, Dedemsvaart, Zwolle, Netherlands.—*Catalogue of Trees, Shrubs, &c.*
 R. Owen, Maidenhead.—*Pedigree Chrysanthemums.*
 L. Späth, Berlin.—*General Catalogue.*
 L. Delaville, 2, Quai de Méjissieric, Paris.—*List of Bulbs.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Vines—Gladioluses—Chrysanthemums (W. B., F. J., and T. W.).—Your letters did not arrive soon enough to be satisfactorily answered this week.

Grapes for Cool House (M. C. B.).—If you have heat, both Buckland Sweetwater and Black Muscat (Muscat Hamburgh) would succeed; if unheated, Foster's Seedling and Trentham Black.

Six Roses (T. S.).—You give no indication as to the colours desired, nor whether you can wish to grow the plants indoors or out. The Bride, Marie Van Houtte, Madame de Watteville, Grace Darling, La France, and Général Jacqueminot give a long succession of flowers for cutting that have many admirers.

Young Men at Kew (Nemo).—There are many advantages to be gained by a little experience at Kew, especially if you should wish to obtain an appointment in any of the Colonial gardens. A wide knowledge of plants can be acquired there, and the system of culture is good in the chief departments. Applications are made to the Curator.

Burying Bulbs (F. J.).—We prefer cocoa-nut fibre refuse to any other material for the purpose, and it is cheap. We have seen both sawdust and ashes answer well, also fail, the former injuring the crowns where it contained much turpentine, the latter when it contained petroleum that had been thrown on the ashes after cleaning lamps. Good leaf soil answers the purpose in view very well.

Heaths and Epacris (J. W.).—You will find all the following useful free-growing and free-flowering Ericas—i.e., Cavendishiana, Ewcriana superba, gracilis autumnalis, hyemalis, perspicua nana, and Wilmoreana superba. Three good varieties of the E. ventricosa type are alba, magnifica, and tricolor. Epacris alba odorata, miniata splendens, and Vesuvius are useful free varieties likely to suit you.

Grapes not Colouring (D. Gardiner).—The crop is probably too heavy, and the root action defective. Your question was answered, but perhaps not in the number you obtained. Replies on gardening subjects are readily given to regular subscribers, but persons who only purchase a paper when they expect it to contain an answer to a question they have sent are quite likely to be disappointed. The remedy is obvious.

Propagating Ampelopsis (E. T. H.).—Firm portions of the young growths of A. Veitchi, cut in lengths of 5 or 6 inches and inserted deeply in sandy soil under handlights, at the present time emit roots. Many plants are raised by inserting cuttings closely together in pots, plunging these in frames for the winter, then placing in gentle heat in the spring. Several are grafted on stocks of the common Virginian Creeper, cuttings of which strike readily in the open ground.

Green Asparagus (M. C. B.).—It is sometimes difficult to distinguish any or but one variety of Asparagus, as we have found the colour depend greatly on the nature and texture of the soil. The Green-topped is considered the English and best flavoured variety, the Red-topped, or Dutch, the largest and most generally cultivated, indeed the sub-varieties of the latter have entirely superseded both. Perhaps the only plan of securing the Green-topped would be to save some seeds from plants that have the desired characteristic, and which may be found occasionally in old beds, and more frequently amongst seedlings of common Asparagus.

Insects on Strawberries (W. B.).—The leaves are infested with a small mite similar to the red spider, and only differing from it in hardness and colour. It is known as Acarus hortensis, and preys upon different kinds of plants. Being on the under sides of the young leaves, and protected to some extent by their hairs, its eradication must of necessity be tedious, unless the plants are in pots in preparation for forcing, in which case they can be easily dipped and swirled to and fro in a solution of soft soap, to which enough sulphur is added to render it of a thin creamy consistency. If the plants are in the ground many of the insects may be destroyed by one person bending the leaves over, and another applying the mixture forcibly through a syringe, or in any other better method that may be devised on the spot. Some varieties are more prone to the attacks of insects than others, and old or weak plants are more liable to be infested than are the young and more sturdy in growth.

Blotched Apples (*Constant Reader*).—The Apple you have sent is attacked by a fungus, but we are unable to state the cause of the attack, as you give us no information respecting the age or condition of the trees or the nature of the soil. The attacks are the most common where the trees are not well supported, the foliage lacking substance, hence unable to purify the crude sap. If the trees are old, and the soil dry, saturating the ground with strong liquid manure, after a plentiful supply of pure water, as has been recently advised, may be expected to improve them; if the subsoil is full of water draining is needed. Young trees can be improved by partially or wholly taking them up and surrounding the roots with loam containing an admixture of wood ashes and crushed mortar rubbish. With full root action in a suitable medium, and the growths sufficiently thin that the leaves are exposed to the direct action of the sun and air, the constitutions of the trees will be improved, and the fruit less liable to injury by fungoid attacks.

Manetti Stocks—Roses for Beds (*A. B. C. D.*).—Manetti stocks are raised from cuttings 9 inches long or more inserted slantingly and the soil drawn up to them in the form of ridges, only one or two buds being above ground, all below carefully cut out, or the Roses huddled on them would soon be overgrown by suckers. When buds are inserted the soil is levelled down for that purpose. Cuttings may be inserted now. You would probably find Roses on their own roots suitable for your purpose. Most of them strike freely from cuttings inserted now, but the lower buds need not be removed, as the growths from them often produce the most and finest blooms. In narrow beds 4 or 5 feet wide you may plant about 18 inches asunder, but you will soon find that some varieties grow much stronger and require more room than others. As you appear to be a novice in Rose culture you had better invest 1s. 1d. in Mr. Gilmour's "Rose Growing for Beginners," which can be had post free from this office for the price named. If after reading it carefully you need further information on any particular point write to us again.

The Nanny Apple (*E. Stephens*).—The name is a recognised one, and the variety is worth adding to your collection. The following is Dr. Hogg's description of this Apple in the "Fruit Manual." Fruit, medium sized, 2½ inches wide, 2½ inches high; roundish, narrowing towards the apex, and somewhat angular on the sides. Skin, smooth greenish yellow, with broken streaks of red, on the shaded side, but bright red, streaked with dark crimson, on the side next the sun; the whole strewn with russety dots. Eye, open, with divergent segments, placed in an angular basin, which is marked with linear marks of russet. Stamens, marginal; tube, long, conical. Stalk, short, inserted in a rather deep, round cavity, thickly lined with rough russet, which extends in ramifications over the base. Flesh, yellow, rather soft and tender, juicy, sugary, and highly flavoured. Cells, roundish ovate; axile, slit. A dessert Apple of excellent quality, and when in perfection a first rate fruit; it is in use during October, but soon becomes mealy. The tree attains the middle size and is a good bearer, much more so than the Ribston Pippin, to which the fruit bears some resemblance in flavour. This is met with about Havant and other districts in West Sussex, and on the borders of Hampshire.

Apple and Pear Trees Unfruitful (*S. G.*).—We have seen the stems of trees with longitudinal incisions through the bark down to the wood, which were made chiefly on trees the stems of which did not increase in thickness with the head, the descending sap current being obstructed at the junction of scion and stock, so as to cause a swelling or excrescence. The scoring of the bark was generally effectual in causing a thickening of the stem, as the injured part was promptly covered with new bark, and in that respect was beneficial in attaining the object of the incision—viz., an increase of supplies through the action of the absorbent and elaborating functions of the roots and leaves, and the tendency was to increase the health and vigour of the trees. Singularly we have known longitudinal incisions act oppositely on vigorous trees, the incision causing wounds which did not heal kindly, the growth being arrested, and a greater number of fruit buds followed. We do not, however, practise or recommend the procedure—viz., longitudinal incisions for vigorous trees. It may be useful when the stem is bark-bound, with a view to increased supplies of nutriment, but for trees that are too vigorous, "ringing" is a better plan, and one that is, if judiciously practised, safe and effectual. It consists in removing a ring of bark a quarter of an inch wide, the cuts being made down to the young wood or alburnum, and every particle of bark, inner and outer, removed between the cuts. It is as well to bear in mind that though ringing the stems or branches of trees tends to fruitfulness by checking the downward flow of the sap, causing the enlargement of the buds or the production of new fruit buds, it not unfrequently culminates in unsatisfactory crops after a few years.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*C. B.*).—1, Calville Blanche; 2, Alfriston; 3, Deme-low's Seedling; 4, Stirling Castle; Pear, Van Mons Leon Le Clerc. (*Mr. Wilbraham*).—2, Lady's Delight; 5, Gravenstein; 6, Lord Derby; the others we cannot identify. (*A. M. T.*).—1, Perhaps a highly coloured King of the Pippins; 2, probably a cider Apple; 3, Court Pendu Plat; 4, Louise Bonne of Jersey. (*A. C.*).—1, Fearn's Pippin; 2, Tom Putt; 3, Royal Somerset. (*E. J.*).—1, 3, and 5, Maréchal de Cour; 2, Gansel's

Bergamot; 4, Ne Plus Meuris; 6, Comte Lamy. (*H. J.*).—1, Swan's Egg; 2, Fondante d'Automne. (*J. A., Somerset*).—The Pear is Duchesse d'Angoulême; the Apple Blenheim Pippin, highly coloured. (*G. Taylor*).—We are unable to recognise with certainty any of the Apples, and suspect they are of local origin; they are generally inferior. (*G. L. Court*).—Sussex Forge Apple. (*Henry Mills*).—Golden Winter Pearmain. (*W. W.*).—The Apples are neither in a condition to be named nor worth naming; we did not think such trashy samples were still grown in Middlesex. (*J. E. P.*).—Cox's Pomona. (*E. Wallis*).—The Shropshire Damson. (*N. M.*).—The Fig is the Black Bourjassotte. (*H. H.*).—1, Marie Louise; 2, Lewis. (*L. T. K.*).—Dutch Codlin.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H.*).—1, Physianthus albens; 2, Tritonia aurea; 3, Cupressus, perhaps C. torulosa, but habit not stated. (*W. C.*).—1 and 2, Davallia dissecta elegans; 3, Selaginella laevigata; 4, Hypericum calycinum; 5, Sedum spurium; 6, Davallia, specimen insufficient; 7, Centranthus ruber. (*Somerset*).—We cannot name your plant without seeing a specimen. Please send samples of the foliage and berries. (*J. J.*).—Clematis orientalis.

COVENT GARDEN MARKET.—OCTOBER 9TH.

Business quiet, with market well supplied.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
" Nova Scotia and	0	0	Peaches, dozen	2	0
" Canada, per barrel	0	0	Plums, ½ sieve	3	0
Cherries, ½ sieve	0	0	Red Currants, per ½-sieve	0	0
Grapes, per lb.	0	6	B'ack	0	0
Lemons, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Musbrooms, punnet	1	6
Beans, Kidney, per lb.	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bustel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches	2	0
Brussels Sprout, ½ sieve	1	6	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capicams, per 100	0	0	" Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Carliflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	0	Scorzoneria, bundle	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	3
Cucumbers, each	0	3	Spinach, bushel	1	0
Endive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Lisias, bunch	0	2			

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms	3	0 to 6	Lilium longiflorum, 12	3	0 to 6
Asters, per bunch, French	0	0	blooms	3	0 to 6
" doz n. English	4	0	Maidenhair Fern, doz.	4	0
Bouvardias, bunch	0	6	bunches	4	0
Camellias, dozen blooms	2	0	Marguerites, 12 bunches	2	0
Carations, 12 blooms	1	0	Mignonette, 12 bunches	2	0
Obrysanthemums, dozen	1	0	Myosotis or Forgetmenots	1	6
Obrysanthemums, dozen	2	0	doz. bunches	1	6
Clove Carnations, 12 bunches	0	0	Pansies, dozen bunches	0	6
Cornflower, doz. bunches	1	0	Pelargoniums, 12 trusses	0	6
Dahlias, dozen bunches	2	0	" scarlet, 12 bunches	3	0
Eucharis, dozen	3	0	Pinks (various) 12 bunches	0	0
Gaillardia picta, 12 bunches	2	0	Poppies, various, 12 bunches	0	0
Gardenias, 12 blooms	3	0	Roses (ladder), dozen	0	6
Glaucoli, per bunch	0	6	" Mixed, doz. bunches	3	0
Glaucoli branchleyensis,	1	0	" Red, dozen bunches	4	0
doz. sprays	1	0	" 12 blooms	0	6
Helianthus, or Sunflower,	8	0	" Tea, white, dozen	1	0
dozen bunches	8	0	" Yellow	2	0
" large, dozen blooms	0	0	Spiraea, doz. n. bunches	0	0
Lapageria, 12 blooms	1	0	Stephanotis, doz. sprays	3	0
Lavender, dozen bunches	0	0	Sweet Peas, doz. bunches	2	0
Lilium auratum, 12 blms	0	0	Sweet Sultan	3	0
			Tuberose, 12 blooms	0	6
			Violets, dozen bunches	1	0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6	0 to 13	Fuchsia, per dozen	3	0 to 9
Arum Lilies, per dozen	0	0	Geranium, Ivy, doz.	0	0
Arborvitae (golden) dozen	6	0	Hydrangea, per dozen	9	0
Asters, 12 pots	3	0	Labrador, per dozen	0	0
Bezonias, various, per doz.	4	0	Marguerite Daisy, dozen	6	0
Balsams, per dozen	0	0	Mignonette, per dozen	0	0
Caladiums, per doz.	0	0	Musk, per dozen	0	0
Calceolarias, per dozen	0	0	Myrtles, dozen	6	0
Christmas Rose	0	0	Nasturtiums, per dozen	0	0
Chrysanthemums, dozen	0	15	Palms, in var., each	3	6
Cockscombs, per dozen	3	0	Pelargoniums, scarlet, 12	2	0
Dracena terminalis, doz.	24	0	Pelargoniums, per dozen	0	0
Dracena viridis, doz.	12	0	Rhodantho, per dozen	0	0
Erica, various, dozen	12	0	Saxifraga pyramidalis,	0	0
Eucalyptus, var., dozen	6	0	per dozen	0	0
Evergreens, in var., dozen	6	0	Solanums, per dozen	6	0
Ferns, in variety, dozen	4	0	Spiraea, per dozen	0	0
Ficus elastica, each	1	6	" palmata, per doz.	0	0
Foliage plants, var., each	2	0			



LANDLORDS' FARMING.

LANDLORDS are certainly the victims of circumstances, for they have to submit to the inevitable, while if regarded in the same sense there need be nothing of the inevitable in a tenant's affairs. Mr. Clare Lewell Reed said recently, "The good land of this country is still worth a fair rent; the really bad, the very heavy, and the very light land is not worth farming without a rent. Take land which is in fair condition rather than take a farm that has been run out." This advice is sound and sensible, but it is after all mere class advice from a tenant farmer to tenant farmers, who if they are wise will turn it to account. We do not envy the feelings of a landlord with farms in hand and others falling in who reads it, for with him it is not a matter of choice, but of necessity. There is the land, what is he to do with it? We do not agree to suffer it to fall out of cultivation, we know he can do better than that, and as a landlord's agent we have paid dear for our knowledge.

It may be taken for granted that the majority of landlords are not practical farmers, and before all things they require an able steward at the helm to steer through the troubled waters of adversity with a fair prospect of success, and we are very confident a really efficient man would be quite content to work upon his merits, to farm by results, whatever might be the quality or condition of the land. We have shown that drainage and tillage are indispensable preliminaries, and are next brought face to face with the all-important question of cropping, for a crop we must have, and we shall not rest satisfied with anything short of a full one upon every part of the land. To grow ordinary farm crops to profit we must have mixed soil land of sound deep staple, and we need do little more than farm really well for the markets which we can serve to most advantage. With such soil success is a foregone conclusion, but it is with the extreme heavy and light and all soil of inferior grades that difficulties arise. To manage such land in an ordinary manner is to court failure. We must carefully consider each case, and treat it accordingly. Quite recently an agent who assumes charge of some heavy land farms this Michaelmas pronounced them unsuitable for the growth of Sainfoin. To convince him of his mistake he was shown many acres of this excellent forage plant all clothed with a full crop of the third year, and a large stack of Sainfoin hay of high quality. Now, this man had undertaken the management of difficult land without sufficient knowledge of the work before him, and assuredly the landlord will suffer in consequence.

For the moment the question pressing most upon us is, What winter crops can we grow to advantage? Beans and Peas are not desirable light land crops, but light land will under good management yield excellent crops of Trifolium incarnatum, winter Oats, Rye, Tares, and, dare we venture to add, Wheat? Yes, we have grown 40 bushels an acre of Wheat on such land by using chemical manures both in autumn and spring, also by sheep folding in autumn, followed by an early dressing of chemical manure in spring. There is really no good reason why moderately light land should not grow Wheat to profit if only it is kept well stored with manure. This must be our guiding principle—sustained fertility, as opposed to incipient exhaustion. It is all very well to say a certain field ought to bear another crop without manure, for it was "mucked" last year. The seed is sown accordingly, but the crop is never a full one because the land is in a state of incipient exhaustion at the sowing, and at the reaping it is practically exhausted of fertility. Economy—so called—leads to this result, but it is a mistake that is fatal to farming. Economic liberality is that which insures pro-

sperity; high farming, tempered by sound judgment, which avoids extravagant or fanciful expenditure, yet spends freely when the outlay points to profit.

If we decide to sow Wheat now, and the land is poor, manure must be drilled with the seed. For land that has been under thorough cultivation for some time the autumn dressing of manure should consist of bone flour and mineral superphosphate in equal parts, followed by another dressing in spring with the addition of nitrate of soda, and also muriate of potash if the land is deficient in potash. But for exhausted land the autumn dressing should consist of quarter cwt. steamed bone flour, quarter cwt. mineral superphosphate, and half cwt. nitrate of soda to insure vigorous growth from the first. Practical men whose words are not lightly spoken have told us again and again that the use of nitrogenous manures in autumn is wasteful and unnecessary, and we agree that it would be so for land which has been under their care, but we must have some soda in autumn for winter corn on farmed-out land. The spring dressing should consist of 1½ cwt. nitrate of soda, 1½ cwt. steamed bone flour, half cwt. mineral superphosphate, and half cwt. muriate of potash.

(To be continued.)

WORK ON THE HOME FARM.

Rye, winter Tares, and winter Oats are sown, so also is Wheat upon all fallow land, and winter Beans are being ploughed in expeditiously by using plough drills. When the soil crumbles freely before the plough, share the use of the plough drill is highly commendable, but if the land is sodden and turns over in the furrows without breaking up, the Beans are liable to perish beneath the inert mass of soil falling upon them as they are sown. Rather than incur this risk we would not sow at all, but wait and sow spring Beans. Much depends upon the exact condition of the soil, and it requires some experience to enable one to decide for the best when its condition is at all doubtful. Last autumn the bailiff of one of our off-hand farms, some twenty miles distant from the home farm, ventured to sow a thirty-acre field of Beans with the plough drills without consulting us. This is a clay farm, and so few plants grow owing to the compact state of the soil, that it had to be re-sown with Oats in spring. On another farm spring Beans were plough-drilled in this spring; the soil, though wet, was not quite so heavy, and when it became dry enough the surface was broken sufficiently with harrow to enable the plant to push freely through it, the result being a full crop of excellent Beans. Due care is taken to make enough water furrows to carry off surface water quickly from all ploughed or cropped land, and to finish the connection of every furrow with the ditches at once, as the work is in hand. Putting off such work to be done at leisure often leads to flooded corn and perished plants.

The nights grow cold and wet, and all cattle should be housed in clean, dry, comfortable yards with deep lodges affording perfect shelter. Calves are confined to sheds with small yards, and are well fed, a little extra care being taken to prevent any falling off in condition. Dairy cows must be kept from eating any falling leaves of an unpleasant flavour, or butter will be spoiled. Much harm is often done to horses by leaving them out too late in the year upon pasture. Not only should attention be given to the provision of shelter, but also to food, for horses now work hard, and they must have corn. An attack of swine fever at an upland farm has been checked by placing the affected animals apart in temporary shelters quite away from the yards, which remain unoccupied, all walls and fences having been dressed with a disinfectant, all litter and manure removed, the surface of the yard broken up and carted away, and fresh gravel laid down.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1880. Sept. & Oct.		Baromet- er at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	29	29.817	50.2	45.0	N.	52.9	53.1	44.0	71.9	39.3	0.010	
Monday	30	29.878	47.8	47.0	N.	52.2	57.0	45.7	91.6	41.0	0.459	
Tuesday	1	29.911	53.0	49.9	N.	51.9	58.0	45.7	94.8	40.4	0.115	
Wednesday ..	2	29.924	51.9	49.7	E.	51.9	58.8	47.4	94.3	42.9	0.261	
Thursday	3	29.841	49.8	48.4	E.	51.0	55.9	44.4	79.3	39.5	0.260	
Friday	4	29.527	46.7	46.4	W.	50.9	51.9	41.3	75.8	35.6	0.231	
Saturday	5	29.685	5.2	45.7	S.	50.2	58.5	41.9	96.8	35.9	0.998	
		29.739	49.9	47.9		51.7	56.2	44.2	86.4	39.5	0.799	

REMARKS.

29th.—Cloudy and cool.

30th.—Drizzle early, and frequent showers in afternoon and evening.

1st.—Frequent showers, but one or two specks of sunshine.

2nd.—Fine and generally bright.

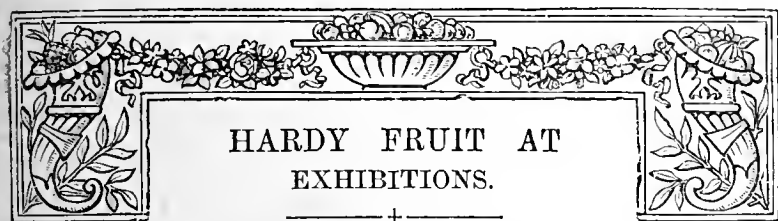
3rd.—Showery early; wet from 11 A.M. to 1 P.M.; then fine with some sunshine.

4th.—Wet all day.

5th.—Bright morning, with one or two slight showers; wet afternoon and evening.

A wet and raw week, but with more sunshine than the numerical values suggest.

Temperature about 3° below the average.—G. J. SYMONS.



HARDY FRUIT AT EXHIBITIONS.

RECENT exhibitions of Apples and Pears, and especially the imposing display at the Crystal Palace last week, have forced a question to the front that appears to require the attention of exhibition authorities. For some time the practice has been steadily growing of including Apples and Pears which have been partially or wholly grown under glass in the collections exhibited, without indicating the method in which such splendid fruit has been produced. It is true the public are beginning to be informed in a negative way that the practice alluded to exists, by some such notification as that "all the fruit in this collection has been grown in the open ground." Over and over again at the Palace we were requested to direct attention to the artificial production of hardy fruit as a method of handicapping the produce of exhibitors who have neither the means nor the desire to resort to similar means of enlarging and improving the appearance of the specimens. No one condemned the practice of growing the fruit in the manner suggested, but only that of associating the dishes with others of samples grown in the open ground. We have also received letters on this subject, and in the whole of them we find almost identical expressions to the effect that the time has arrived for separate classes being provided for Apples and Pears grown under glass or in pots, also for those grown in a natural manner in the open ground.

Nor is the desire for a change on the lines indicated confined to gardeners and amateurs who have no orchard houses, but it is shared in by nurserymen who either have suitable glass structures at their disposal, or who could speedily erect them; but they do not consider it is the best way to place before the public varieties of hardy fruit grown with the aid of glass, which ninety-nine out of a hundred of the purchasers of trees must grow out of doors. They evidently suspect that present honours, won by extra aids, may lead to future disappointment; and there is the possibility of the public mind being impressed with the view that the splendid Apples seen at exhibitions, and which are really produced by garden or orchard trees, are grown under glass, and if that should come to pass they will not be encouraged to engage in the occupation of fruit culture.

For ordinary purposes of supply Apples and Pears must be grown in the customary way, or such improvements on it as experience suggests, so long as the principle is adhered to; and nothing can be more desirable than that the best examples and varieties grown on the same lines should be displayed where the public can inspect them, as they show what is within the reach of purchasers of trees if they are favourably situated, choose the best varieties, and bestow on them the best cultural attention. Exhibitions are then practically instructive, but if inexperienced visitors are tempted by the most handsome specimens which have been grown under glass, to order trees of the same varieties on the assumption that they can produce equally fine samples in their gardens, they will be misled, not instructed, by the shows, and no long time will elapse before the great expectations incited will end in disappointment.

The culture of Apples and Pears under glass, or partly under glass and partly in the open air, is a very delightful and, well conducted, a profitable occupation, because the magnificent specimens produced realise high or "fancy" prices for festival occasions,

when only the best is sought for regardless of cost; also for dressing the windows of high-class fruiterers' establishments; moreover, those who derive pleasure from growing hardy fruit, such as Apples and Pears in orchard houses, are equally justified in doing so, as are those who grow hardy flowers under glass, such as Hyacinths, Lilliums, Roses, and others which give so much satisfaction to their owners. About that there cannot be two opinions; but there is an unmistakeable feeling, deepening yearly, that orchard house fruit of the kinds under notice should be separately classed at public exhibitions of hardy fruit.

A distinguishing trait in the Anglo-Saxon character is not only the desire to excel but the determination to do so. It is this persistent endeavour that has enabled the race to assert its supremacy in production and colonisation. It is an admirable spirit, and it happily pervades the world of horticulture. If one competitor for supremacy adopts fresh methods by which he gains prominence others will inevitably follow; and if it is found in contests of hardy fruit that orchard houses give to their possessors an advantage, more and more of such artificially aided produce will be forthcoming, and the possibility is not very remote that the bulk of the dishes of Apples and Pears that are placed in competition for the leading prizes will consist of such fruit, which cannot be regarded as fairly representative of that grown in British gardens and orchards.

No one for a moment suggests that the inclusion of glass-aided Apples and Pears in collections of hardy fruit is done with the intention of leading visitors to suppose they can grow equally handsome specimens if they purchase trees and plant them in their gardens. Nothing of the kind is intended by the exhibitors. The object of each is to provide the most effective display. Exhibitors think much less about the public than of their fellow competitors when preparing for shows; but it must never be forgotten that the public are influenced by the exhibits, and it cannot answer in the end for them to be misled by lack of knowledge simply through the method in which one grower feels compelled to meet another in arranging his products for the approval of judges who award the prizes for the best examples. These gentlemen cannot take cognisance of the conditions under which fruit is grown, but must follow the schedules in making their awards, and until a distinction is made in them between glass-aided and garden-grown fruit the honours must inevitably fall to the best regardless of methods of production.

One of the most satisfactory thoughts that arise in the consideration of this question is the absolute non-necessity of glass-aided Apples for representing a high standard of excellence. No better fruit could be desired than that represented in hundreds of dishes at the Palace Show, as gathered from trees in gardens. As produce for supplying the markets it could hold its own with the best from orchards in other lands, and every year proves more conclusively than the past that the lost supremacy of British growers of hardy fruit is only temporary, and the time is approaching when it will be regained. The advance that has been made during the past few years, and particularly since the great Apple Congress at Chiswick in 1883, is both gratifying and encouraging; and there is not the slightest reason to suppose there will be any cessation of endeavour now that substantial agencies are established for the attainment of the object in view.

A division of classes which is now called for would be satisfactory to the majority of cultivators; growers of fruit would be placed on a greater equality at exhibitions, and the public would have fairer representative collections placed before them as standards of excellence not beyond their attainment in the outdoor section; while connoisseurs would see the advance in superiority of that resulting from extra appliances, and it is not unlikely that an impetus would be given to both forms of cultivation. Be that as it may, the present mixed method of exhibiting Apples and Pears is very far from meeting with general approval, and the whole

question appears to merit serious consideration with the view to the proposed change, which many hope for, being carried out.

PELARGONIUMS.

THOSE who grow for the market certainly produce Pelargoniums of the Show and Fancy type in fine condition ; but this is not the case in private gardening establishments. Feeble specimens are too frequently seen, yet when well grown their decorative value is unquestionable. If we judge rightly from the quantities of old plants cut back year after year that make growths very little thicker than a straw, we may conclude there is some reluctance in attempting to propagate fresh stock. Even if this course is decided upon it is difficult to obtain cuttings from those that make weak spindling flowering shoots only. Cuttings produced by such plants rarely form luxuriant specimens. No doubt the treatment they receive after they are pruned and started into growth may largely account for the unsatisfactory condition in which they are often seen. From some even of this description fresh vigorous stock might be raised if early spring propagation was adopted, but when the plants have to be flowered cuttings cannot be spared without disfiguring them. It would be wise in many cases to forego flowers for a season in preference to retaining worn-out stock.

Cultivators no doubt find a difficulty in propagating these as freely as Zonals, and the usual practice is to defer doing so until after the plants have flowered, and then insert what is little better than flower stems. Robust growers produce cuttings plentifully after flowering, but the plan is to secure as early as possible any non-flowering shoots that may be produced. When cut-back plants are grown there is no difficulty in selecting shoots for cuttings. Those grown for flowering during August and September yield cuttings plentifully, because they can be safely topped in early spring.

When Pelargoniums have to flower early in the year cuttings must be rooted early, and for this purpose it is useless to rely upon those from plants which flower during June and July. There is not time to root cuttings from these and grow them into creditable specimens by the end of September. Pelargoniums to flower early should by that time be strong and furnished with four to six good shoots. Do not pinch the shoots after the end of August, and then they will break strongly into growth and be in the best possible condition for their winter quarters. In this condition they are certain to flower early if properly treated. We fail to see why they cannot be had in flower much earlier in the year than is generally the case, even with the treatment accorded to Zonals during the early months of the year. At the present time the season is not so extended as it might be. Care and forethought only are necessary where glass accommodation is ample to flower them nine months out of the twelve.

The reason why cuttings do not strike freely is because those too soft or too hard are often inserted. The former if kept close and moist are liable to damp, while if kept dry they shrivel and are as long in rooting as those that have become too firm and ripe before insertion. This is the case even in spring, when unsuitable cuttings are selected. Sturdy cuttings that are kept moist after insertion can be rooted and often grown into plants a foot or more through by the time hard cuttings, or those that are rendered so by being kept dry, are induced to form roots. Good cuttings root freely enough during March in a temperature of 65° provided the soil is kept as near an intermediate state for moisture as possible. They certainly take a little longer to root than Zonals, but if treated the same as regards moisture in spring there would be no occasion to complain of the results. Cuttings inserted after the plants flower are frequently too firm, and consequently are a long time in rooting ; in fact, they made very little growth in the dull days of autumn. To induce them to grow then or during the winter results in weak spindling shoots. I am certain that if more moisture was given to the cuttings and less drying greater success would follow. Cuttings inserted after the middle of June strike better when dibbled into a border outside than they do when placed in pots in a frame. If dry weather follows insertion keep the cuttings moderately moist by syringing them once or twice daily.

Free flowering early varieties that are rooted in spring and induced to grow sturdily under glass until May in 4-inch pots will be furnished with three or four shoots. These should then be placed in 6-inch pots and grown in cold frames. When well established and the shoots have made three or four leaves they should be pinched again. If abundance of air is admitted they will grow strongly and branch freely. By the beginning of August they can be placed in 8-inch pots, and before the end of the

month they will be fully a foot through. These can be stopped again about the end of the month, and allowed to grow and flower. For the early months of the year they are better in 6 or 7-inch pots, and should have by the first week in September shoots after pinching about 1 inch long. Pinching in this case must be done early in August. After the end of September it is important that the plant have a light airy structure and a position near to the glass. Keep them growing slowly until the flower trusses are visible, when a temperature of 55° to 60° will bring them into flower. The atmosphere must be kept rather dry, air admitted freely on all favourable occasions, and water supplied with great care.

When cuttings are rooted from March until July there is no difficulty in having sturdy plants before the approach of winter. This is important, then the plants only need to grow slowly during the months of November, December, and January. All that is needed is to keep them in a moderately dry atmosphere, rather dry at their roots, and in a temperature that does not fall below 40°. They are, however, perfectly safe if frost only is excluded. In a very low temperature, however, the foliage is liable to suffer from damp. Plants that have their shoots stopped at the beginning of November break again into growth, and are in capital condition for placing in their largest pots in January. All shoots needing pinching must be attended to during the months when growth is practically at a standstill. It is only a waste of time to allow them to make more than four good joints before the points are removed. If this is done and the plants are close to the glass they will make sturdy growth as soon as the days lengthen, and will be capable of supporting their flowers without the aid of stakes. When they grow during the winter the shoots are soft and long-jointed ; in fact, they seldom, however good the treatment may be afterwards, make growth sufficiently firm and compact to flower as profusely as might be desired.

The sturdy compact appearance of plants, and the manner in which they flower, is largely due to the compost and the method of potting. If they are potted loosely and in an open compost they make soft growth, long-jointed wood, and flabby foliage. A little leaf mould, amounting to one-third, may be used with advantage at first, but afterwards none should be used. The most suitable compost is fibry loam, sand, and one-seventh of manure, which must be pressed firmly into the pots.

After the first flower trusses are visible soot water in a clear state assists them wonderfully, and artificial manures, such as Clay's, Beeson's, Standen's, or any other suitable kind, can be applied to the surface soil about once a fortnight. When liquid manures only are supplied the roots have a tendency to go downwards instead of coming to the surface.

Healthy Pelargoniums are seldom attacked by aphides to the same extent as those of weak growth, which are induced to make growth in winter in a close atmosphere. Plants of this description are difficult to deal with when once they are infested, simply because dipping in a solution of tobacco water, if strong enough to kill the insects, turns the leaves yellow, and the same results follow fumigating with tobacco. If done carefully healthy plants with leathery foliage will bear either treatment without injury.—NORTHERNER.

ARTICHOKES.

HELIANTHUS TUBEROSUS, or, as it is more generally known, the Jerusalem Artichoke, is a native of South America, and is quite hardy in this country. Why it received the name of Jerusalem is doubtful, very probably from its Italian name Girasole. It is of easy culture, as it thrives in almost any soil ; a rich, loamy soil, however, will be found to suit it best. No manure should be given, as this tends to promote a too-luxuriant foliage rather than the production of large and well-flavoured tubers.

The tubers for planting should be of a medium size, cutting any large ones in half and using as single sets ; these should be planted in rows 1 yard apart and from 10 to 12 inches between the sets, planting them about 4 inches deep. In many gardens these are met with in out-of-the-way corners, the excuse being given that the young tubers persist in growing after having once occupied a certain piece of ground. These, however, can be readily uprooted, hence there is no sufficient cause why they should not receive the good culture they certainly deserve.

The ripening stalks must not be cut down too early in the autumn, as it is during this ripening process that the tubers attain their full size, which would not be the case were they deprived of them prematurely. It is also not advisable to dig up and store the tubers, as by doing so they lose their natural freshness.

Cynara Scolymus, or the Globe Artichoke, is entirely different from the Jerusalem Artichoke ; this being a perennial plant from the south of Europe, and is without doubt cultivated more as a

luxury than for profit, the flower heads containing the edible part. It can be propagated by seeds or offsets. If by seeds they should be sown during the month of April upon an open, sunny site, these to be thinned out where too thick and transplanted the following spring to form permanent beds, planting them in rows 3 feet apart each way.

If increased by offsets remove some of the strong side growths from the parent plant during April or May, transplanting them as advised for seedlings. The flower heads are fit for use when they shew symptoms of opening, so as to show the florets within. When the object in view is to have large flower heads, the greater part of the small ones which issue from the sides should be pinched off. It is very important that when the flower heads are cut off that the flower stalk should be broken close to the ground, as when these are left they exhaust the roots. The heads can be kept for a short time in a cool place.

As winter approaches the plants should have some of the old leaves removed and be given a covering over the roots of manure litter, which must be removed the following spring. Then select four or five of the strongest shoots on each plant, removing all the others; this can be done by cutting them out with a spade, giving the plants afterwards a layer of manure and turning the soil to its former place, using the finest to go between and around each shoot retained.—A. G. FRAMPTON.



DRESSING ROSE BLOOM.

As this is a matter which has been much spoken of during the present season, and which is not unlikely to come on for adjudication before the highest Rosarian Court of Appeal, it may be well if you allow the subject ventilation in your columns.

The question at once occurs, What is "dressing?" What it is in the case of Chrysanthemums and Carnations is not unknown, and may be necessary, but is the queen of flowers to condescend to curl papers? As the late Sir Roger de Coverley used frequently to remark, there is "something to be said on both sides." It is certainly lawful to remove a damaged petal from an otherwise perfect bloom. As has been wittily observed, this is rather undressing! If a Rose has been arrested by some caprice of weather, and has not the perfect arrangement of petal which Nature intended, if some tender touches of an ivory pencil case will help it to what the "N. R. S." calls "the most perfect phase of its possible beauty," why, let it have it. But when it comes to dragging Marie Baumann into a distorted imitation of the Camellia roundness of A. K. Williams, or torturing Alfred Colomb into the solid stiffness of that best of travellers, Star of Waltham, it is quite another thing. A judge of high standing has told me of a box of twelve hedizened overdressed huzzies which he and his fellows sadly passed by as partaking more of the demi-monde than the beau monde of the Rose parterre. Thus perhaps the thing will right itself. If otherwise, alas! for the future. As Jane Taylor remarks in her moral poems somewhere with a slight adaptation,

I'd be the meanest thing that blows,
Rather than that affected Rose!
Its very scent offends my nose;
'Tis worse than any weed!

—A. C.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

THE above Association held a meeting and Conference in the Entertainment Court at the Crystal Palace on Thursday last, October 10th, when about 200 persons were present, including the following amongst others:—Messrs. T. Francis Rivers, Sawbridgeworth; J. Austen, Witley Gardens, Stourport; Albert Bath, Sevenoaks; C. F. Barker, Hereford; T. W. Beach, Brentford; G. Bunyard, Maidstone; A. F. Barron, Chiswick; E. Butts, Streatham; J. Cheal, Crawley; J. Cranston, Hereford; G. W. Cummins, Carshalton; A. Dean, Bedford; G. Gordon, Gunnersbury; G. Hammond, Brentwood; J. Hudson, Acton; G. Merritt, Harpenden; C. Orchard, Isle of Wight; W. Roupell, Roupell Park; R. Smith, Yalding; J. C. Slater, Exeter; J. Wright, B. Wynne, and the Hon. Secretaries, Mr. Lewis Castle and W. Earley.

The President, Lord Brooke, M.P., had telegraphed regretting his inability to attend the meeting, and in his absence Mr. T. Francis Rivers, one of the Vice-Presidents, took the chair, opening the proceedings with an address, which is given in full at the end of these notes. Mr. J. Wright next read a paper devoted to a review of the Fruit Question. This evoked considerable discussion, in the course of which Mr. C. F. Barker stated that he believed the reason that England had fallen so enormously in the growth of hardy fruits was the English land laws. He was confident from the observations he had made during the last two or three years he had been resident in England, that were the

land laws as free as in the Australian colonies and in America English fruit growing would never have occupied the position it did now. The tenant farmer could not afford to grow trees because the tenancy of his land was so uncertain. Unless some drastic measures were taken to alter the relations between landlord and tenant they would only carry on a miserable existence in competing in fruit growing with America and Australia. Mr. Albert Bath stated that although the soil in Kent was so well adapted for fruit culture, he had found in recent travels that many other districts were quite as suitable, both as regards soil and situation. He called attention, however, to the dreadful ravages committed by the caterpillars of the winter moth, and he said it was one of the difficulties that must be met and overcome before success could be expected.

Mr. A. Dean remarked that at the present time the tenants could practically secure their own terms with regard to the land, and he believed there was not half a dozen landlords who would not let their land on favourable terms for the purposes of fruit culture. He suggested that something should be done in the way of setting up pomological schools in various parts of the country, and conducted by professors who might take students and teach them the pomology adapted to the requirements of particular districts.

Mr. G. Hammond also referred to the damage caused by caterpillars, as from nine acres of fruit trees this year he had only been able to gather about nine bushels of fruit from that cause. Trees had in some cases been completely stripped of the leaves, and he had seen similar instances elsewhere. In some subsequent discussion it was mentioned that Mr. Llewelyn of Penllergare employs a lamp suspended on the trees as a trap for moths, but it was explained that this would be useless in the case of that named, as the female moth does not fly.

Mr. G. Gordon read a practical paper on Peach Culture out of Doors, and Mr. Hudson supported the views he thereenunciated. Mr. R. Smith read a short paper on Apple Culture, and after some further discussion the Chairman moved—"That this meeting pass a resolution thanking the Lord Mayor and the Fruiterers' Company for the prominent part they have taken in encouraging the fruit growers of this country in advocating and recommending the cultivation of fruit on small holdings, and that such resolution should be conveyed to the Company, with an expression of willingness that this Association should assist as far as lies in its power in that good work."

Mr. Wright, in seconding the resolution, said the Fruiterers' Company had shown a desire to rise to the position of things, and though they might fairly believe that they were lacking in practical knowledge of fruit culture from the very necessity of their lives and their engagements, they had at least shown a real desire to do what they could and give information that would be of assistance to the small cultivators of fruit in the kingdom.

The resolution was put and carried.

On the motion of Mr. Bunyard, Maidstone, a vote of thanks was passed to those who had contributed papers; and a like compliment having, on the motion of Mr. Cheal, been paid to Mr. Rivers for presiding, the Conference was brought to a close.

AN ADDRESS BY MR. T. FRANCIS RIVERS.

SINCE we last met there are indications that public attention has been drawn to the very great importance of the meeting here last year, which was held for the purpose of pointing out the absolute necessity of developing fruit culture in these islands for the purpose of meeting the threatened competition from other countries with fruit of our own growing. Although we succeeded almost beyond our hopes in arousing the attention of cultivators and owners of land to the knowledge that we were not sufficiently awake to the fact of the enormous and increasing consumption of fruit, and that we were not making due preparation to meet this, either in the present or the future, as we are not content to rest satisfied with the success of that meeting, we have assembled again to-day to discuss the same subject, and to impress upon fruit growers the importance of the subject by repetition, and to elicit greater and more extended knowledge by discussion.

Fruit-growing has, I am glad to say, received very great assistance from the powerful advocacy of the Lord Mayor for the present year. For the first time I think in the civic history of London the chief magistrate has consented to depart from the traditions of commerce only, and has encouraged the cultivators of land in the United Kingdom to hope that they may derive some part of the profit which has been enjoyed to a very great extent by foreign cultivators, subject, of course, to the considerable deductions which they have to make over to English importers. London alone, with its millions of inhabitants, is an immense consumer, and it is difficult to say where it will stop, as there are no apparent signs of any cessation of building, turn to which side you will. With greater or more diffused wealth the demand for fruit will increase; it is a business which cannot fail except for physical reasons, such as the divergence of the Gulf Stream, which would probably have the effect of locking up our land in perpetual ice and snow, or the encroachment of ice from the North Pole, neither of which catastrophes seem at all likely to occur in our time. Foreign invasion

we hope that we shall know how to avert. The almost absolute certainty of continuance must be set against the fact that it is not possible to make a rapid fortune by growing fruit; it is not, however, subject to the vicissitudes which beset those who endeavour to achieve rapid fortunes; and although excessive foreign importations may to a certain extent check our legitimate hopes, the fruit-growing industry is not alone in this matter.

Our Society will, I hope, set before the public that fruit-growing should be more developed on farms, that it should not be confined to market gardens and to speculative orchards. If the multitude of farms were to devote a small proportion of land, say 1 rood to 150 acres—to the cultivation of fruit which is adapted to the soil, a very large supply would come to the markets. But I do not mean by naming this proportion of land that it is to be cultivated in the ordinary style of farm orchards, which seem to me always to promise a very remote profit to the planter, as so much time is consumed before the trees come into bearing, but an orchard fenced and cultivated as carefully as a well tended kitchen garden, the profit of such an orchard being amply sufficient to repay the care and labour given to it; by the production of fruit of superior size and quality, such as will be inevitably exacted by the consumer of the immediate future, who will not be content unless he is supplied with fruit of good quality either for the dessert or the kitchen. This quality can only be obtained by proper cultivation and the knowledge of soil and of classes of fruits adapted to the soil. As a rule I think too much reliance has been placed upon our venerable orchards. It has been, I think, too much the custom to consider that the inheritance of an orchard planted by a great grandfather is enough for the great grandson during his lifetime, and to this idea our present failure to meet foreign competition is in some measure due. These venerable trees are picturesque, but they are not profitable. A great part of the fruit when gathered is of inferior size, and has to be selected very carefully, generally leaving too large percentage of small fruits to realise a good price; and it is also very expensive to gather, as this cannot be done without ladders. The system of cultivation which I should advise, rightly or wrongly, is that of comparatively dwarf trees from which the fruit can be easily gathered, that they should be planted at distances varying from 6 to 9 feet, and that moderate pruning should be employed by which the trees can be kept at a size which will enable the planters to realise these conditions of gathering a large quantity of fruit from a limited area. You will soon perceive, on taking the measurement of a standard tree of fifteen or twenty years, that a great deal of room is occupied by unproductive wood, the stem and the branches spreading over a great space of ground, and not by any means improving the grass underneath. This waste is avoided by closer planting and more thorough cultivation. If it is supposed that such a plantation will not endure so long as our respectable old trees, it will at all events have fed and profited the planter, who need not trouble himself to look beyond his own necessities and desires. It is out of the question to think that fruit trees are to last so long that two or three generations are to elapse before new plantations are requisite.

At the risk of being thought too confident I must insist that the orchard of the present should be prepared by trenching 24 inches deep, with a very liberal supply of manure, fenced in with wire netting where game is plentiful, kept free from weeds, and planted with dwarf trees from 6 to 9 feet apart, a row of bush fruit planted between. Of orchard fruit in England the Apple and the Plum must always remain the most important, and in both classes the English can challenge the whole world for unrivalled excellence in sorts. At the present time we can, therefore, meet foreign competition by keeping our markets supplied with superior quality, and this we can do. Our Gooseberries, Currants, Strawberries, and Raspberries are better than any that the Continent can furnish, and although I believe that Continental growers are preparing to meet us by adopting our varieties, yet they cannot, in Gooseberries and Raspberries especially, compete against our climate, which is admirably suited to the production of these fruits.

It has been the custom for many centuries to consider the Crab stock as the only stock for Apples, except, of course, in gardens, and this is certainly true with regard to standard orchard trees; but as I have stated, and as I believe, that profitable Apple culture must be carried on by closer planting, it will be more advantageous to the planter to select a stock which has the property of inducing early fertility. There is no doubt that Apples grafted on the Crab stock will, if planted when two years old, come into bearing very quickly, but in the course of a few years the trees become too vigorous and produce more wood than is requisite. We have for some years employed the so-called Paradise

stock to correct this tendency with the best results. There is now a variety of stock produced from the seed of the Nonesuch Apple, and which is singularly well adapted for dwarf orchards. The trees are moderately vigorous, remarkably fertile, and, moreover, the production of roots is so profuse that trees seven or eight years old can be removed with safety; in fact I removed some hush trees of the Cox's Orange Pippin, which had been planted by my father, which have remained in the same place for fourteen years without root-pruning. These trees are still healthy fruit-bearing bushes, and are about twenty-four years old. This stock is the Nonesuch. The French Paradise, or the dwarf Apple of Armenia, is not at all suitable for planting for profit. Apples grafted upon it form pretty and curious garden trees, and nothing more. When I had the honour of reading a paper before you last year I mentioned a list of sorts, which was supplemented by other speakers, there is therefore no necessity to recapitulate these sorts. I may say that I hope before long our markets will be so well supplied with Apples of such good quality that our very good friends, the Americans, will be compelled to consume their flat, tasteless, and woolly Baldwins amongst themselves; we shall not want them here.

We are, I understand, menaced with the importation of Plums from the vast Plum-growing districts of Servia and Eastern Europe, probably the same sort of rubbish as that poured into Hull from the Plum orchards of Germany. The Servians, I understand, distil an ardent and fiery spirit from the Plum, horribly injurious to the consumer. This competition we shall have to meet. It seems to me almost incredible that the products of such a distance can beat us who are close to our markets; but here again the quality of the fruit must be the point on which we shall gain the day, and I am sure that we have the advantage of the choice of sorts, in Plums especially, and the quality, combined with quantity, must be our *Cheval de Bataille*. Let the Servians keep their own fruit, unless, indeed, we cannot beat them. In a former paper I have given my own experience of the most profitable sorts of Plums, to which I hope you will allow me to refer you. I have been successful in securing crops of Plums owing entirely to the quality of the soil, which is singularly favourable to their culture. It is a strong calcareous clay, and to the nature of the soil I owe all my success. The planter of Plum orchards should be very careful to examine the soil before making any large plantations. The Plum is one of the most valuable fruits for preserving and drying. Although dried Plums seem at present almost a continental monopoly, there is no reason why this industry should not be acclimatised in England, especially as I have reason to think that we shall find sorts of English Plums fully equal in drying properties to the most approved continental kinds. This is a matter which no doubt will be taken up and developed by our fruit preservers as soon as they are satisfied that the manufacture can be carried on with success and profit.

It is not only in England that the revival of fruit culture has awakened a strong interest. In Ireland efforts are being made to popularise the culture on small holdings. Mr. Bullock Hall, one of the leaders in this most important and salutary undertaking, has already published an account of the success that is likely to be derived from an intelligent system of cultivation.

All Englishmen will, I am sure, earnestly hope that Mr. Hall's efforts in this direction will be rewarded by the success which is due to him. I must here remind English growers that to Ireland we owe two of our most popular Apples, the Irish Peach and the Kerry Pippin. I think also that many varieties are peculiar to Ireland which are not found in this country. Besides the cultivation of the Apple I am sure that in Ireland districts can be found where Pears can be grown fully equal to those produced in the most favoured Pear country—namely, the south-west of France. From Limerick and its neighbourhood I have seen splendid specimens of Pears. If the necessary capital could be obtained I am convinced that a large Pear-growing industry could be established in certain parts of the south of Ireland, and Pears could be grown not only for the ordinary market, but of a size large enough to appear on the dessert tables of the wealthy. Of course it must be understood that the cultivation of large and weighty dessert fruit must be conducted under certain conditions—that is, on dwarf trees and in sheltered places, as they are too heavy to hang in gusty weather when they have attained their full size. As the season of dessert Pears lasts from September to March, and sorts exist which will furnish dessert tables during these months, it seems to me that a wide field is open, and that an opportunity is afforded which can be almost monopolised by Ireland.

Pear-growing in England is a very uncertain business. There are, no doubt, some localities in which the Pear orchard is profitable. I

have noticed that in the suburban gardens of London the Pear tree is generally more vigorous and healthy than the Apple, owing, no doubt, to the warmer climate and its capability of resisting the evil effects of the London smoke.

I observe that it has been remarked that the workman does not care about fruit. The cause of this indifference is not far to seek. A workman's bodily strength is his capital, and this capital must be carefully husbanded.

At present prices half a dozen Apples fit to eat would certainly cost 3d. I do not think the most ardent vegetarian would maintain that these Apples would satisfy a hungry appetite. Bread and cheese and an Onion would give more nourishment at the same cost. If fruit could be purchased cheaply enough for his income, I have no doubt the workman, if he did not care about it himself, would be glad to supply his children with this very necessary diet for young stomachs. This desirable result will no doubt arrive as soon as the orchards with which every suitable farm should be furnished come into working order, and the fact generally recognised that this replanting must be done. The remarkable influence which Mr. Gladstone so justly exercises on social matters in England when directed to fruit-growing has given an impetus which will not cease, and his speeches on behalf of fruit-growers in the past two years will be never forgotten. The Fruiterers' Company, departing from its traditional custom, which I think was connected solely with the importation of foreign fruit, has, with the assistance of the Lord Mayor, taken a great step in the encouragement of a native industry; and if the frosts of our English springs will abstain from destroying the tender blossoms of our fruits for a few years we shall establish such a supply that foreign competition will be compelled to cease from troubling us.

THE FRUIT QUESTION.

[Read by Mr. J. Wright at the Crystal Palace.]

WHEN requested to lend a helping hand in the promotion of any worthy object in the world of horticulture I am not able to give a refusal, but must try and do a little good in my day and generation. In these days of wide world competition there is great need for mutual help and friendly co-operation for the attainment of a common object of national importance—improving the food resources of the kingdom in the interests of every class in it—owners of land that has been falling in value of late; tillers of the ground who have had such slight returns for their labour, and consumers of the produce of the soil in placing before them better samples for their sustenance and enjoyment. That is the triune object in which many can aid, and by each doing a little it will be attained. But in the name of common sense let all petty jealousies be abandoned, and let us take a lesson from our rivals in other lands in working unitedly for the general good. This is entirely compatible with individual enterprise which is not in the slightest degree handicapped by association on a broad basis, and I am convinced that nothing but good can result from a policy of federation in furtherance of the important work of developing the resources of the nation to which we are proud to belong.

The object of the British Fruit Growers' Association is to promote the extension of fruit culture, to increase the quantity and improve the quality of home-grown fruit. "A very good object no doubt," observed a friend, with a cynical twinkle of the eye, "but don't you think nurserymen are at the bottom of it?" "Yes, certainly I do; and if you reflect for a moment you will find that there can be no substantial progress made without them. They are at the bottom of fruit culture just as iron is at the bottom of railways, and coal at the bottom of iron." Here you see is where the obstructiveness of suspicion and petty jealousy comes in. But depend upon it if my friend had had to dig his own coal, and wheel it home in his own barrow, he would not be half so well off as he is to-day. Whatever of prosperity has been enjoyed by the ironmaster and coalminer has not been obtained at the sacrifice of a single advantage that this user of their products possesses, but he has benefited by the use of that which has been provided for him better and cheaper than he could have obtained the necessities for himself. The benefits have been mutual. It is the same in the fruit tree world. The nurserymen are at the bottom of it. They can raise trees better and more cheaply than individual cultivators can raise them for themselves. Let these "go to the bottom" and try—sow seed, select varieties, raise stocks, and graft or in any other way increase the number, and see where they will be ten years hence. They will be at the bottom still, while rival growers who purchased and planted at the time the individualists commenced action in their own isolated way, will be reaping the reward of their trade co-operation with the raisers of the

trees. What we want and what we have is a body of highly skilled, high-minded fruit tree raisers, and we may safely leave the competition, that is a natural element in trade routine, to supply the tree planters to the best possible advantage.

I want to see a great and a growing trade in fruit tree production, and care not how great the prosperity of those who engage in it may be, provided the planters and cultivators prosper accordingly, and the supply of home-grown fruit by its abundance and excellence can hold its own in the competition of the world. Can this be done? Yes, it can when the seasons are favourable for fructification and the development of the crops; and when they are not, we will enjoy what can be obtained elsewhere, and from a consumer's view be thankful that the sun does not cease to shine everywhere, and that all the orchards of the world are not barren at once.

We have, as a consequence probably of our insular position, been in the habit of taking a much too circumscribed view of the great question of the supply of fruit. We did not perceive soon enough the revolution that steam, machinery, and electric telegraphy were effecting and have effected, in bringing the sources of supply, thousands of miles away, practically nearer to us than were many of those of our land to each other not much more than a generation ago. We rested on the strength of our insularity too long. We, that is to say those who had the means for planting trees for maintaining the fruit supply, did not perceive the necessity for change. The old trees were trusted to do what they had done before—provide what would be wanted; and if the fruit should become scarcer through the demand being greater, consequent on the increase of population, the price would rule higher and the owners of the trees would reap the advantage. That was the line of reasoning during the time when Dr. Lardner said he would swallow the first steamship that crossed the Atlantic, and subsequently. It was fallacious, absolutely and ridiculously fallacious, and we in later times, and until now, have suffered by the great delusion.

What was the result—the natural result—of such apathy? Others, more far seeing, in distant lands that were being commercially brought steadily, and eventually rapidly, nearer, did for us what ought to have been done at home—planted trees for supplying our markets and the homes of the million with fruit! Then what did the home neglecters do in return? Only what was to be expected—condemned the introduction of that which they refused to provide; wasted time in railing against it, and waiting for acts of obstruction being passed excluding it from our markets. Vain was the condemnation, futile the efforts of obstruction, and at last the truth was realised that the only certain and practical way of regaining the lost ground—lost by inaction and the slow perception of realities—was to choose varieties of fruit and trees wisely, prepare the ground, plant, and cultivate well for producing an adequate bulk of useful fruit at home, equal in appearance and superior in quality to the samples grown abroad, for meeting the demands of British consumers. That is the right way, undoubtedly; indeed, the only reliable way, unreliable as the seasons may be; the only safe and sound method of procedure under the circumstances; and that it is a profitable way those who were the first to adopt it and carry it out on sound lines were the first to prove the fact, and many a cultivator has reaped the reward of his enterprise, and shown by what he has accomplished what others may do as well as he has done.

Those who have found that the cultivation of hardy fruit can be advantageously pursued in this country are extending their plantations, and others who have seen the satisfactory results achieved are engaging in the work, and every year brings the time nearer when the hardy fruit requirements of this kingdom will, in the absence of adverse seasons, be produced on British soil, and the capital that has so long been expended on imported produce will be invested in labour that will be employed in home production to the direct advantage of the nation.

In England, Ireland, Scotland, and Wales fruit may be and should be grown for the populations. In limited areas it is so grown, and foreign competition is not feared by the producers; but only small patches, so to say, are as yet so occupied, and a great field is waiting to be tilled, while an ever increasing population is waiting for the produce.

It is not suggested here, nor will the proposition gain the sanction of practical men who have gone through the mill of experience, that any town worker or town lounge, if "planted" on an acre of ground, and a number of Apple trees are planted in it for him, will find it a paradise, and as the story ends "live happy ever after." Such teaching as that is misleading. It is in reality trifling with a serious subject. Born on the land, and knowing well the hardships of a peasant's life, I have an earnest longing to see the home of every son of toil made happier by his labour, and I know well that many men

accustomed to agricultural work could, if suitably circumstanced, profit by fruit culture; but forty out of fifty mere townsmen would fail in the effort, just as they would fail in the occupation of other rural pursuits, requiring less knowledge than fruit culture, in which they have had no experience. When agricultural labourers, who in too great numbers find their way into large cities, can be transformed into swallow-tailed and white-cravated waiters in hotels, and there gain a good livelihood, the much-to-be-pitied unemployed townsman will prosper on the land as a fruit grower, and not till then. The great desire, as it seems to me, is to so conduct the operations on landed estates in the country that employment can be given to a greater number of workers, and so keep them out of the too thickly populated towns, where a life of misery is lived by thousands; but the investment in labour to be satisfactory must leave a margin of profit to the employer. Only a very limited number can be engaged for contributing to the luxuries of life. The majority must work on commercial lines and earn a little more by their labour than is invested in it, or the connection cannot long be sustained. The introduction of machinery has lessened the demand for manual labour in agriculture. Fruit cannot be to the same extent grown by machinery, but it can be grown, and more profitably than ordinary farm crops, with the aid of intelligent workers, and far more of these might be kept in their parishes than is the case now, and the amount invested in their labour be remunerative to themselves, while at the same time all worthy, striving, and capable men should, I think, be encouraged to grow fruit also on plots that in many districts might be provided near their dwellings.

Regard the matter from whatever point of view we may, it cannot be otherwise than desirable to find work for labourers on the land. A contented, industrious peasantry is an important factor in the wealth and strength of a nation. Depopulation is an indication of decay, and the dwindling away of the people has never made a country richer, but left it poorer. This must be so, because the strong and most enterprising—the real creators of wealth—are the first to go and become in other lands competitors of their kinsmen at home, leaving the weak, lame, and lazy behind them. These prey on the accumulations of others, hence impoverish instead of enrich the land in which they spend their profitless time and live their luckless lives.

Many of the landowners of the kingdom have it in their power to improve their possessions by increasing the productiveness of the soil by the systematic cultivation of hardy fruit, and at the same time by the necessary employment of more labour do good to others as well as themselves. It is not suggested that they will heap up riches in the work, but if they can add, as thousands may, an interesting and instructive feature to their estates and benefit others, at the same time realising even 5 per cent. on the outlay, is it not better than the 2 or 3 per cent. derived in the old way, with the attendant grumbling of men who can scarcely find sustenance for their families?

I am confident that if fruit gardens of two or three acres, more or less according to the extent of estates and the suitability of soil and position, were established on the residential property of the aristocracy and gentry, also on the glebes of certain of the clergy, that good would eventually result, in which all would share—owners, workers, and consumers of fruit, always provided the varieties of the different kinds of fruit were well chosen, and the best attention (which is the cheapest) bestowed on them in the work of cultivation. I am not now considering the interests of recognised fruit farmers. It is not necessary. They know what they are about, and I trust will increasingly prosper, and at the same time provide the great mass of consumers in large cities with a larger and better supply of wholesome fruit at a lower price than now rules for the best samples. Lower the price of these by increasing the supply, and the consumption would increase enormously, and the aggregate profits of the cultivator would in all probability be greater too.

A gentleman in the Westminster Drill Hall remarked on examining the fruit there last Tuesday, that he had ten children and would like to keep them well supplied with the best fruit; but to give 3d. each for Pears and 2d. for Apples was too much, even for him, and he is not a man of small possessions. If really good fruit could be had at half such fancy prices, he would no doubt buy four times more; and he is but one example of thousands. The prices demonstrate the scarcity of high class fruit and the necessity for growing more, and trees that produce it do not take up half the room that those do which produce the worst.

"Oh," say some, "but if you go on planting, fruit-growing will be overdone." Who do you think preaches that doctrine? Well, I have heard it preached by old fogies who a few years ago said a penny a mile

express fares on railways could never pay, and I have heard it preached by men who have planted thousands of trees and are planting more. Is not that a little significant? They appear to want a monopoly of the industry, but they will not get it. Syndicates can be overdone, and my desire is not only to see the acreage under fruit increase, but the number of its cultivators.

I am going to tell you that the average standard of merit of fruit, and especially of Apples and Pears, in these fertile islands of ours, is miserably, disgracefully low. After examining the magnificent display on the exhibition tables, you may think that a bold statement, but it is true. That splendid fruit, which proves what can be done in England, is no more representative of the real supply than the faultlessly made garments in the best West End shops are representative of the habiliments of the multitude. We have to remember the tattered and torn in that line, and the specked and spotted juiceless trash in the fruit world in striking an average. How do I arrive at my average? I am one of a few individuals who have to handle and examine specimens of fruit sent to be named from gardens and orchards in all parts of the kingdom. Do you think the growers of the samples send the worst? I know that numbers of them say they send the best they could, and regret they could not send better. What, then, do we find? I do not see why the truth should be withheld, but think from every point of view it is better it should come out. The truth is this—not one sample in twenty can, by any stretch of the imagination, be regarded as superior; not half of what we receive is half so good as it should be, and the great bulk can only be properly described as "rubbish." I speak in the presence of others who also spend many weary hours in trying to name bad fruit; and although I have friends on the press evidently generous enough to correct me when they can, they cannot make "copy" at the expense of my veracity in this matter; and that being so, I shall submit with some confidence that the truth, the humiliating truth, of the above assertion, is proved to demonstration.

We have, I am glad to say, fairly commenced a revolution in fruit-growing in this country, and not before time. Some time must elapse before the work is completed, and before the average yield approaches the standard that is set up in the show to-day. Knowledge, practical knowledge, is wanted on the subject. I have nothing to say against colleges to which the rich can send their sons to sit under learned professors, but I should like to see pomological schools, in the form of well managed fruit gardens, on estates in different parts of the country, with collections of the best varieties of fruit grown in them. The founders of such collections would stand to gain by their establishment, while the inhabitants surrounding would have opportunities for acquiring the best of information in the cheapest possible way that might be of substantial value in the cultivation of fruit for their families, and the populations of adjacent towns.

CAN PEACHES AND NECTARINES BE SUCCESSFULLY GROWN AGAINST OPEN WALLS?

[A paper read by Mr. George Gordon.]

ALTHOUGH Peaches and Nectarines cannot in point of general utility be compared with Apples and Plums, they are of more than sufficient importance in the economy of the garden to justify our devoting a brief period to the consideration of the practicability of largely augmenting the supply of their distinctive and luscious fruits. As the question I have to submit to the Conference is "Can Peaches and Nectarines be Successfully Grown Against Open Walls?" I shall not trouble you with the geographical details of their native country, or with the facts bearing upon their early history. Those matters would undoubtedly be full of interest, and enable me to present you with but little effort an attractive paper; but my object is to promote a more extended and rational culture of these fruits in British gardens, and I am fully assured that I shall best serve that object by addressing myself as closely as possible to the question.

It will not be impossible to avoid history altogether, but I shall not take you back to the sixteenth century, when these fruits were introduced to this country. I shall confine my historical details to the period over which my own observation and experience extend, and take you back some thirty years. In those days the production of Peaches and Nectarines out of doors was regarded as one of the ordinary phases of garden practice, and in consequence their cultivation was decidedly more successful than it is at the present time. We had not in those days discussions as to the relative advantages of growing these fruits out of doors and under glass. If fruit was wanted in advance of that produced by the trees against the open walls a glass structure was devoted to its production; but the outdoors trees were depended upon

for the main crop, and in consequence they had careful attention, and as the result they produced crops of excellent fruit. Failures did occur then as now, but they were comparatively few, and taking a run of years the cultivator obtained an abundant supply.

Let us pause to consider why the opinion of cultivators underwent so great a change that in many gardens it has long been considered an unsatisfactory if not a hopeless task to produce a dish of Peaches or Nectarines without the aid of glass. That glass is of immense service in fruit production no one could be more ready to acknowledge than myself, but I would submit that it does not necessarily follow that because Peaches and Nectarines can be successfully grown in an orchard or Peach house, that those who have no such convenience should not have their table supplied with these fruits during some part of the year. The fruit grower cannot wholly escape from the influence of fashion. Thirty years ago saw a great change in the decoration of the flower garden and the uprising of the bedding system, by which the hardy flowers were replaced by bands and masses of colour produced by plants more or less tender. The propagation and preparation of these comparatively large stocks of bedding plants diverted much attention from other departments, and the bedding out had to be done just at the time when the Peach trees require considerable attention. The bedding system undoubtedly exercised a material influence upon the outdoor culture of these fruits; but the chief cause of the decline was not the fever engendered by the bands, crescents, circles, and stars of scarlet, yellow, and blue with which the flower garden was so liberally furnished. Rather may it be traced to the more general introduction of glass houses into gardens about twenty-five years ago. We were then told that to attempt to produce a dish of Peaches or Nectarines out of doors was an act of folly of which no gardener would be guilty. We were assured also that the seasons had so changed that to efficiently protect the flowers and young plants from the cold blasts of spring, or to properly ripen the wood in the course of the season was an impossibility. But this was not all. For many years following the cheapening of glass by the removal of the duty and the adoption of improved processes of manufacture it was too much the practice to attach undue importance to the indoor department of the garden. Twenty years ago the ambition of the majority of young gardeners was to obtain charge of the conservatory and plant stove. Work in the Peach house, Pine pit, and vinery was not particularly objected to, but the pruning and nailing of wall trees was done with reluctance, and the rougher operations of the kitchen garden under protest. In consequence of this combination of circumstances it is not surprising that the outdoor culture of the Peach and Nectarine should have almost become a lost art amongst us, or that the supplies should for a long period have been small and intermittent. Happily a great change for the better has taken place in the ideas of young gardeners, and the Peach and the Nectarine have shared in the improvement that has been effected in the management of the fruit garden as the result of the change. We may, indeed, congratulate ourselves upon the fact that they are now being grown against open walls with greater success than at any period during the past twenty years. Much, however, has yet to be done before their outdoor culture can be considered thoroughly satisfactory. Holding this view, I hope that there will be no relaxation on the part of those who take an interest in hardy fruits to complete this much needed reform.

If I am asked what course we are to take to increase both the quantity and the quality of the fruit, I have no hesitation in saying that it must be in the direction of an improved system of management. I have been told, I am afraid to say on how many occasions, that it is simply a question of climate, and that if we could only change the climatic conditions which obtain, there would be no difficulty in obtaining an abundance of fruit. A change for the better in the climate would, no doubt, be an advantage; but as that is beyond our control, we must endeavour to cheat it by adopting a course of culture suited to the peculiarities of the trees.

As the Peach and Nectarine are natives of Persia, which has a much warmer and drier climate than that of the United Kingdom, it necessarily follows that they are comparatively tender and more susceptible to adverse influences than are the majority of fruits grown out of doors. It is not necessary to tell you that they are liable to suffer from the frosts and biting winds of spring, or from severe weather in winter, following a summer not particularly favourable to the ripening of the wood. But I would submit that their liability to injury in these two seasons is greatly overrated, and that it may be materially reduced by judicious management. Success or failure rests chiefly upon the condition of the wood at the end of the summer, and if that is fairly well ripened, it depends very much upon the activity of the cultivator in

the spring following as to whether or not he gather a good crop of fruit in the course of the summer. To obtain well-ripened wood, excepting in seasons that are particularly favourable, is by many regarded as an impossibility. But I do not so regard it, for to do so would be to ignore the teaching of long experience and wide observation. It is simply a question of placing the roots under proper conditions, and we must obtain clearer views as to what these conditions are, and sweep away some of the cobwebs that hang about the practice which generally obtains at the present time before we can hope to see the culture of these fruits placed on a satisfactory basis. We must fully appreciate the importance of well-drained borders, and to show how necessary they are, I would say that with a superabundance of moisture about the roots, and especially in a stagnant state, the trees will make wood deficient in fibre, and continue in growth until so late a period that the completion of the ripening process is out of the question. Therefore, the steps necessary to prevent the water remaining in a stagnant condition about the roots must be taken either before or after the borders are formed. Anxious to avoid occupying time with more detail, I will content myself with saying that a drain laid down along the front of the border, 6 inches or so below the bottom of the border, will suffice to carry off superfluous water. In other cases it may be necessary to supplement the drain with a layer of brick rubble or broken stone underneath the border. On soils that are naturally cold and heavy it is a great advantage to raise the surface of the border from 12 to 18 inches above the general level, and to separate the border from the cold subsoil by a layer of lime concrete. To provide a layer of drainage materials or of concrete will undoubtedly add to the cost. But I would submit that one of these provisions would be made by the experienced cultivator in forming a border for trees under glass when the soil is wet and cold. Then why not make a similar provision for trees in the open which are assuredly less favourably placed?

Referring briefly to the formation of the borders, permit me to say that a good strong loam is the most suitable for Peaches and Nectarines. But there are comparatively few gardens in which they will not thrive without any additions being made to the staple. Here it may be necessary to consolidate a light sandy soil by a liberal addition of loam brought in from the outside, or a moderate quantity of well-pulverised clay. There the staple may be so heavy and tenacious as to render a liberal dressing of some light material desirable. To break up the border to the depth of 2 feet or so will be advisable, but this must be done a sufficient length of time to enable the soil to settle down before the trees are planted. It is a good practice to trench the border in the winter, then crop it during the summer, and plant the trees in the autumn following. Not a scrap of manure should be added to the border when prepared. I know that we are told in the books and elsewhere that as the trees will in all probability occupy the same positions for many years, the borders must have fertilising matters added to them when under preparation. This mischievous teaching is not modern, and has much to answer for. Planted in a rich border the trees grow with excessive luxuriance, the knife is freely used in the removal of fat shoots, and gumming, with a whole train of evils, follows as a matter of course. To abolish the use of manure in the formation of the border will be a great gain, as we shall then obtain a firmer and more satisfactory growth from the first. Let it not be understood that I am advocating a starving system of culture. So far from this being the case I would suggest that when the trees have commenced to bear, and not until then, they should have whatever assistance from fertilising matters that may be necessary, for to obtain first-class fruit from trees that are not in a vigorous condition is impossible.

Passing on to a reference to the trees, I would submit as the most suitable those that are in a moderately vigorous state, and have undergone some amount of training in the nursery. I would also give a preference to trees on the Mussel stock, and showing but few signs of the knife. In pruning the trees during the first two or three years, a course intermediate between that generally adopted by the past generation of cultivators and that which now obtains will give the best results. The older growers cut the leading branches the first season back to about one-third of their length, and in subsequent seasons pruned severely. By this means they obtained trees well furnished from the base, but the work of filling the wall space was slow, and the production of fat shoots gave much trouble. The cultivator of the present day contents himself the first and several subsequent years with merely taking off the tops of the leading shoots. Under this course of procedure large wall spaces are quickly covered, but in the majority of cases the trees are indifferently furnished with bearing wood in the centre. From the first overcrowding of the growth must be avoided, as it is only

by allowing each shoot sufficient space for the full development of the leaves that strong well-ripened wood can be obtained. Further, all the shoots that will not be required should be removed at a comparatively early period of the summer, the precaution being taken to proceed gradually with the work, that the trees may not be subjected to any material check. At the commencement of the disbudding the cultivator must determine what shoots will be required for laying in, and having selected those occupying suitable positions, must so shape his course that no shoots beyond what are absolutely necessary are laid in. To lay in two or three times as many shoots as are required, in case they may be wanted, as is frequently done, is one of the several hindrances to Peach culture, and the practice cannot be too strongly condemned. The summer disbudding should indeed be so carried out that the winter pruning will consist chiefly in cutting away the shoots that have borne fruit, and shortening those of the previous season.

To discuss the relative merits of varieties would be interesting, but to do so would be to go beyond the scope of my paper. But as having a direct bearing upon the question under consideration, I would urge the more extended culture of the excellent early Peaches and Nectarines raised at Sawbridgeworth, and the fine early Peaches received from America, more especially on soils and in districts not particularly favourable to these fruits. Ripening their fruit in the second half of July and at the beginning of August they complete their growth early, and plenty of time is afforded the wood to attain full maturity. They are also of service in greatly prolonging the season, a point of no small importance in gardens of all classes. Concurrently with an extension of the culture of the early sorts there should be a reduction in the space devoted to the late kinds, for under the most favourable conditions only are they even moderately good.

There is only one other point to which I would direct the attention, and that is root pruning. This phase of Peach culture seldom receives the attention its importance demands. We see in all direction trees producing fat wood, and we see also cultivators endeavouring to check the production of wood of this description by cutting away the strong shoots at their base. If it is necessary to check an undue luxuriance of growth the roots must have attention, and they may be simply shortened or the trees be lifted and then have the roots shortened according to the condition of the trees. When they have occupied the same position several years without being disturbed at the root, it is necessary to proceed cautiously with repressive measures. But in all cases it is essential to shorten any strong roots that may have struck down into the subsoil, for in no small degree do they promote the production of soft unripened wood. It is indeed necessary to keep the wood near the surface, for to have them within the influence of the sun and air is a prime factor in the production of an abundant supply of richly flavoured fruit.

APPLES.

[By Mr. R. Smith, Yalding.]

NOTWITHSTANDING the foreign competition I maintain British growers could hold their own in the English markets if they would spend more time and labour upon the trees in the orchards, and keep the Apple trees clean from lichen and insects. Nothing improves the bark of Apple trees more than whitewashing the stems and all the large branches with lime. I have noticed the last few years how clean and bright the bark has looked in the spring after being whitewashed a year or two ago. I strongly recommend throwing powdered lime into the heads of large Apple trees during the autumn and spring months—as soon as the leaves are off in autumn, and before the buds swell in spring. This work is not costly, and can be done by any handy labourer.

I find the Apple trees in orchards, say forty or fifty years old, have very little time and attention devoted to them. Here is the great error. From the small wood in the heads of such aged trees yield very inferior fruit, and such helps to glut the market. If the British Apple grower for market is to hold his own in open competition with the foreign growers he must use every means in his power to grow only good fruit. This means high class cultivation. That is what the Apple wants. It is the high-class cultivation that I wish to impress very forcibly upon the grower. I have here two samples of Apples taken from old trees from an orchard. These trees have been cleaned as advised above. These specimens are equal in size and colour to any from young trees of the same variety; one is Beauty of Kent and the other is a local variety called Brenchley Pippin, a seedling raised at Brenchley in Kent, rather small Apple, but as shown is of fair size and good colour, much like the King of the Pippins in shape, and for size of a well grown King. This Pippin is an excellent cropper. I have never known it fail in twelve

years. But what I want to point out is that good sound Apples can be grown on aged trees in the orchard if properly cared for as to pruning and keeping them clean and manuring, not disturbing the roots by digging about them. Keep the land well mulched with farmyard manure from time to time—that is, in autumn and summer. Aged trees want a little pruning every year, rather than a severe pruning occasionally. I have no doubt whatever the British Apple grower for market has many drawbacks. He wants more security of tenure. This will come before long. The landlord begins to find out it is to his own interest that the tenant has security for his investment of his own capital on the land he holds.

Every Apple grower for market should make a point of visiting his neighbours every autumn, as much would be learnt in this way. No doubt a few would be found who would go in for high-class cultivation and planting the best varieties suitable to the districts. Many mistakes have been made in not getting the right sorts for the localities, consequently a great loss of time and season is the result.



EVENTS OF THE WEEK.—The Royal Horticultural Society's Fruit and Orchid Committees will meet in the Drill Hall, James Street, Westminster, on Tuesday, October 22nd, at 11 A.M. The National Chrysanthemum Society's Floral Committee will meet at the Royal Aquarium, Westminster, at 2 P.M., on Wednesday, October 23rd. On the last named day the Horticultural United Provident and Benefit Society's Annual Dinner will take place at the Cannon Street Hotel at 6 P.M., N. N. Sherwood, Esq., in the chair. Tickets can be had from Mr. W. Collins, 9, Martindale Road, Balham, S.W.

— **THE FRUITERERS' COMPANY'S PRIZE FUND.**—Amongst the subscribers to the fund of £5000 now being raised by the Fruiterers' Company for the encouragement of fruit growing in England are His Grace the Duke of Westminster, £50; His Grace the Duke of Newcastle, £50; Her Grace the Duchess of Grafton, £5; the Earl of Dartmouth, £20; Lord Crewe, £5 5s.; Lord Wolverton, £10 10s.; the Baroness Burdett-Coutts, £50; the Right Hon. W. H. Smith, M.P., £20; Messrs. Crosse & Blackwell, £52 10s.; C. A. Sperati, Esq., £21; F. Gorringer, Esq., £10 10s.; R. Barrow, Esq., £5 5s.; and J. H. Cunningham, Esq., £5.

— WE learn with regret that MRS. M. WILLIAMS died at the Victoria and Paradise Nurseries, Upper Holloway, on the 10th inst., and we express our hearty sympathy with the veteran horticulturist, Mr. B. S. Williams, on the loss he has sustained.

— **GISHURSTINE.**—Price's Patent Candle Company usually remind us of the approach of winter by sending samples of this valuable dressing for boots. It is largely used not only by workmen on the land in wet weather, but by young men who are employed under glass, where much watering and syringing has to be done, and is found to exclude wet and act as a preservative of the leather.

— **HEAVY YIELD OF POTATOES.**—A correspondent sends us a record of the proceedings in taking up and weighing the crop of half an acre of Potatoes in the middle of a field in Yorkshire, as grown under ordinary farm management by Mr. John Shelbourne. The tubers, which are stated to be of extraordinary size, weighed 9 tons 4½ cwt., or 18 tons 9 cwt. per acre. The variety is new to the district, and is named Excel All.

— **PLANT AND TREE LABELS.**—We last year referred approvingly to Chandler's copper labels, some samples of which are now before us. They are as thin as paper, and when laid on a soft pad and firmly written on with an ordinary pencil or style, the names are indented and remain legible no doubt for years. They require no string or wire attachment for placing round the trees, the tags for this purpose being part of the labels, and, being flat, do not cut the bark.

— **MANDEVILLA SUAVEOLENS.**—In your issue of September 26th the question is asked, "Who has tried it in a cold house or against a wall?" In the island of Guernsey it grows freely out of doors. I have

had two plants on a south wall of my house for twenty-two years, they bloom well, but only seed in very warm summers; and on another house with an eastern aspect there is now a fine plant covered with blooms. I consider the *Mandevilla suaveolens* quite a hardy creeper in this island.—C., *Guernsey*.

— **LIQUID MANURE FOR FRUIT TREES.**—I should like to ask Mr. Edmund Tonks what good liquid manure would do for my fruit trees during winter. I should say no good at all, for in winter the soil is cold and clammy. I can answer for the land being well drained. Some Apples and Pears are 18 inches through the stems. Does he think on such land he could with safety use liquid manure if he had the working of it? I think his answer will be a loud "No." I prefer a good mulching of leaves and stable manure.—R. H. S.

— **THE THAMES BANK IRON COMPANY** desire us to state that they have made important improvements in the "Champion Horizontal Tubular Boiler," expansion and contraction being now effectually provided for by the substitution of compressed indiarubber rings for caulked sockets; also that in the event of a pipe requiring to be replaced at any time, this can now be done in a few minutes without disturbing the brickwork setting. These boilers, we are informed, are in great request for trade establishments and private gardens.

— **WE** have to announce the death of MAJOR A. F. LENDY, which took place at Riverside House, Sunbury-on-Thames, on October 10th. Major Lendy was for some years a Fellow of the Royal Horticultural Society and a frequent visitor at the shows and meetings. He formed a good collection of Orchids at Sunbury House, including many rarities, but, owing to his failing health they were recently sold by auction. Major Lendy was also a Fellow of the Linnean and Geological Societies, formerly captain of the French Staff, and major of the 4th Middlesex Regiment. He was in his sixty-fourth year.

— **WAKEFIELD PAXTON SOCIETY.**—At the last meeting of the members of this Society at Councillor Lupton's, the Saw Hotel, Mr. Squire Pickersgill presided, and Mr. G. Gill was in the vice-chair. Mr. W. Grix, gardener, of Gledhow Hall, near Leeds, read an excellent and practical paper on "The Gardenia." Mr. W. Hudson of Sandal Grange and Mr. Fenner of The Woodlands, Sandal, put a few questions to the essayist, and after they had been satisfactorily answered, Mr. T. Garnett proposed a vote of thanks to Mr. Grix, and this was seconded by Mr. B. Whiteley, supported by the Chairman, and heartily carried.

— **READING AND DISTRICT GARDENERS' IMPROVEMENT ASSOCIATION.**—The opening meeting of the autumn session of this Association was held on Monday last, when the members attended in large numbers to hear a paper on "Peach Culture" from Mr. Wm. Lees, Chairman of the Association. Unfortunately, however, Mr. Lees met with a somewhat serious accident a few hours previous to the meeting and was unable to attend. His paper was read by Mr. Turton of Maiden Erlegh, and was much appreciated by the members. Mr. Jas. Martin occupied the chair. Judging from the attendance at this, the first autumn meeting, together with the capital programme that has been arranged, the session promises to be highly successful.

— **A FRENCH translation of Mr. Lewis Castle's ORCHIDS; THEIR STRUCTURE, HISTORY, AND CULTURE,** has been prepared by M. A. de Meulenaere, Secretary of the "Orchidophiles Belges," and has just been published in Ghent by F. & R. Buyck Frères, 13, rue de la Tour Rouge. It comprises 189 pages, the list of Orchid illustrations having been extended by the addition of numerous references to continental works, and the list of Orchid amateurs includes the names of those in England, Germany, Austria, Belgium, France, Holland, Italy, and Switzerland. The English list, which was taken from the third edition of Mr. Castle's book (published nearly two years ago), requires some revision, but the directory altogether will be found very useful. The translation has been admirably rendered; the book is well printed, and neatly bound in green cloth.

— **THE WEATHER AND PLANTS.**—Our Lanarkshire correspondent writes:—"The present year has had its peculiarities, as every one has, on some plant or plants. For example, last year *Erigerons* bloomed with me in August; this year, although warmer and the plants stronger, they have not bloomed at all. The same may be said of *Coropis lanceolata* and a *Statice*, while for the past twenty-five years *Gloire de Dijon* Rose has not made such strong shoots. Wallflowers in 1888 took the whole summer to complete their first flowering spikes; this year they have

completed their first flowering, ripened their seeds, and are for the second time in profuse bloom. A better example of giving annuals every opportunity of developing their growth may be seen in a border of *Mignonette*, the plants 18 inches apart in the row have extended to 5 feet across. The autumnal *Colchicum* began to flower on the first day of September, and has continued until now. We have had copious rains lately. Frosty nights have also been frequent, but never so severe as to injure the most tender plants; most of them, especially single *Dahlias* and *Mignonette*, affording a liberal supply of flowers."

HEYSHAM HALL.

BEING in the neighbourhood of Heysham Hall, the residence of F. W. Grafton, Esq., we paid a visit one morning to the gardens there. Mr. Lomas, the gardener, was at home and busy as usual. He at once conducted us to the conservatory, a handsome structure built in the Queen Anne style, one end adjoining the mansion. It is well furnished with plants, the roof with suitable climbing varieties, and at each side of the pathway down the centre with *Liliums*, early flowering *Chrysanthemums*, and other plants, both flowering and fine-foliaged, including *Palms* in the best of health, the borders being planted with *Selaginella*, which gives to the whole a fresh appearance. We next made a tour of the pleasure grounds, passing through the orchard on the way. Apples and Pears were good crops, some of the Apples, notably Warner's King, being very fine. The trees were healthy, not a sign of canker. Damsons also were a heavy crop. Both Apples and Pears were quite up to the average. The orchard is in a sheltered position, and in one equally so is situated an herbaceous garden laid out in the old style with gravel walks and Box edgings. This garden was designed and planted by Mr. Lomas, not the least interesting feature in it being the labels attached to each plant, which bears the common and botanical name of the variety, and in most instances their native habitat. This is well worthy of imitation by all who intend planting, or have herbaceous borders. I must not attempt to name many of the plants grown, the majority being past their best; but sufficient were then in bloom to show what a grand sight it must present. Carnations are largely grown, a place being found there for Mrs. Reynolds Hole, *Gladiolus*, single *Dahlias*, and *Sunflowers*; one a double variety resembling somewhat a *Cactus Dahlia* flowered in England for the first time this season. The terraced flower garden, from which a beautiful view is to be had of Morecambe Bay, was gay with *Pelargoniums*, *Calceolarias*, and other plants in beds in keeping with the situation. The terrace walls are covered with *Ivies*, and in small beds adjoining these walls are *Roses* in good health and still producing fine blooms. On the opposite side of the mansion several carpet beds looked very well; other beds are occupied with Carnations, Tuberous *Begonias*; and one bed with *Verbenas* had a bright appearance.

In the fruit houses the early Peaches and Grapes were over, but a few bunches of Grapes were still hanging, which gave one some idea of the fine crop previously gathered. The houses of Vines were still interesting to the gardener, for the wood was short-jointed and ripened, promising well for another year. The Grapes in the late houses were finishing well, and fine both in bunch and berry. Pine Apples were producing medium-sized fruits, and in an adjoining house Tea *Roses* trained over an arched trellis had done good service. Tomatoes in another house with late Peach trees on the back wall were hanging in fine bunches; the wood was not gross, but healthy, and bore fruit very freely. They were planted in boxes along the front stage of the house and the shoots trained up under the roof. I must not omit mention of a house of Tuberous *Begonias*, chiefly single varieties; they presented a grand sight, some of the individual blooms being quite 6 inches across.

Stove and decorative plants are grown in other houses, all having the appearance of great care being bestowed upon them. *Chrysanthemums* are not grown here on the large bloom system, but fine healthy plants are coming forward for decorative purposes. Strawberries in pots for forcing are grown in large quantities, and appear to be thoroughly established in their fruiting pots.

In the kitchen garden we noticed good examples of Brussels Sprouts, President Carnot, Leicester Red and Sutton's White Gem Celery, Beet, and Peas, giving promise of plentiful gatherings for some time longer. The walks, and indeed all parts of these gardens, were scrupulously clean, no quarter being given to weeds, the whole reflecting great credit to Mr. Lomas, with whom a most pleasant morning was spent.—G. GARNER.

TREATMENT OF SOILS AND MANURES.

BEING entitled to reply to Mr. Tonks' remarks on page 314, I will be as concise as possible. The fact still remains that carbonic acid is deposited upon the surface of the soil in the form of carbonic dioxide, notwithstanding the diffusion of gases. I would ask Mr. Tonks a few pertinent questions, but as he states he has finished in this discussion it would be taking up space needlessly to do so. I began my articles with a view to impress upon those gardeners and others having plenty of solid and liquid manures the desirability of making the best use of them, and tried to prove that they could then produce as good vegetables and plants as others having at command unlimited quantities of manufactured manures. I did not condemn them, and had Mr. Tonks

waited he might have found me advocating them in some cases, and I fail to see that he has proved anything in opposition to my views on that subject.—G. A. BISHOP.



JOTTINGS.

THE Royal Horticultural Society's Orchid Nomenclature Committee will shortly meet to discuss an important question—the improvement of the present system of naming Orchids; and it is to be hoped in the interests of all concerned that the members will give the matter their most careful consideration from every point of view before adopting any revolutionary method. It would be easy to frame a series of rules for the regulation of nomenclature, but it is impossible to enforce these except so far as regards the Society's own meetings, and unless they are drawn upon a very

at Streatham, and was generally respected. Both were comparatively young men in full health. Mr. White has opened the fund with a subscription of £50.

At the Royal Horticultural Society's recent meeting (October 8th) several noteworthy Orchids were shown, not the least remarkable being the handsome raceme of *Vanda cœrulea* from Tring Park. Mr. Hill informs me that he believes the cause of the exceptionally deep colour distinguishing the specimen was the fact it had been somewhat freely exposed to air, as in the *Cattleya* house it was placed immediately under the ventilators. During the summer and in fine weather these were fully open, and in consequence the plant had been for a long period in an almost continuous current of air. When possessing the deep blue colour of this specimen the accuracy of the name can be fully appreciated; as a rule the washy flowers are far from cœrulean.

The variety of *Cattleya Hardyana* from Mr. E. G. Wrigley, Howick House, Preston, awakened some comment, as some slight differences were noticeable between that and what is regarded as the true type, which originally appeared in Mr. Hardy's collection at Pickering Lodge. *C. Hardyana*, it may be remembered, is regarded as a natural

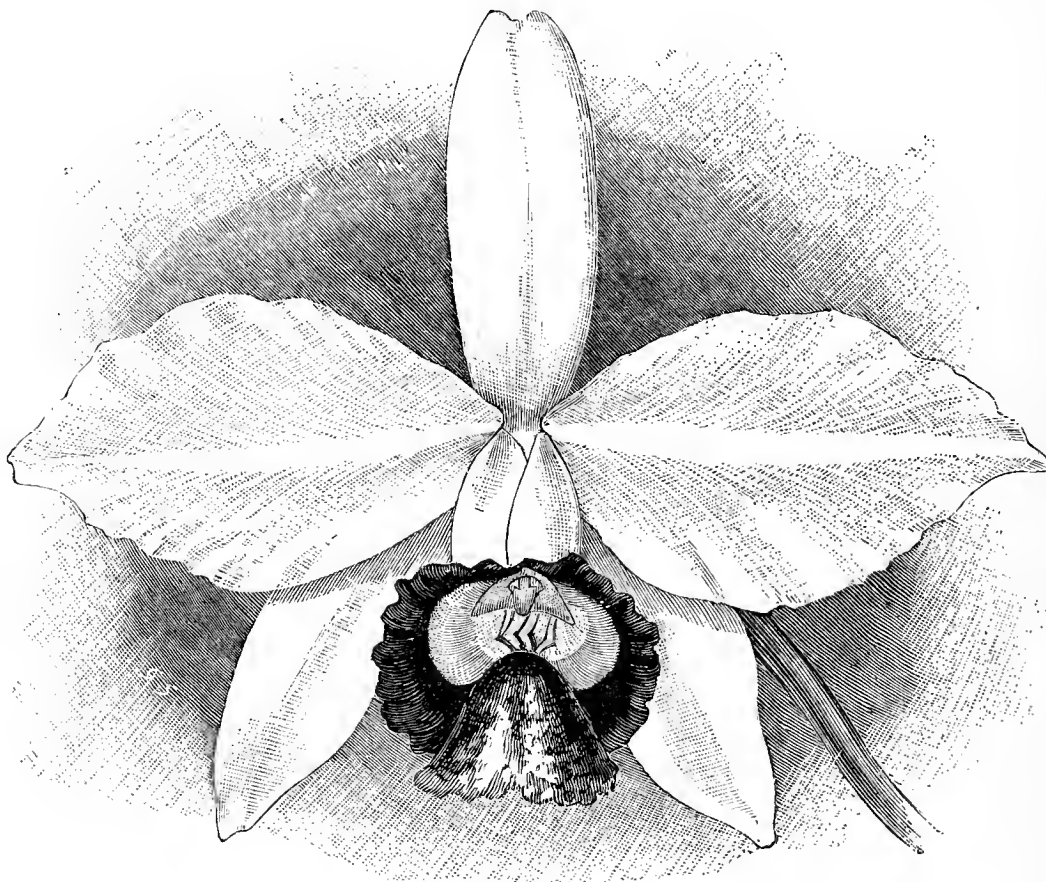


FIG. 40.—*LÆLIA PRÆSTANS ALBA*.

broad basis and are free from every suspicion of "faddism" they are not likely to meet with general acceptance. This would be lamentable, as the present confusion is bad enough, but it would then be increased tenfold, and further it is quite probable that the exhibits placed before the Orchid Committee—already far from as numerous as they should be—would soon be decreased if exhibitors found the names of their plants altered in a manner they disapproved. Every effort should be employed to obtain the opinions of orchidists throughout the country, and the Committee ought to have included at least three times its present number of members to secure anything like an adequate representation of the general views on the subject.

It is very satisfactory to learn that a fund has been opened on behalf of the widows and families of the late Mr. W. Hall of Tulse Hill and Mr. R. Fraser of Ardarroch, Mr. Harry J. Veitch being Chairman, Mr. Protheroe the Treasurer, and Mr. Fred. Horsman, Colchester, the Secretary. Both the unfortunate men were well and widely known in the Orchid world. Mr. Hall was perhaps better known in the neighbourhood of London, and won the esteem of all who knew him by his straightforward business habits and genial manner. As the Secretary of the Brixton Chrysanthemum Society he gained the good opinion of all with whom he was associated. Mr. Fraser was for some time in charge of Mr. Measures' Orchids

hybrid between *C. Dowiana aurea* and *C. gigas*, was imported with the last named, and found its way into several collections, but first flowered with Mr. Hardy. From the latter a plant was exhibited before the Royal Horticultural Society at South Kensington on August 11th, 1885, when a first-class certificate was awarded for it, and it was thus described. "The flowers are of great breadth, but the sepals are not very broad, the colour being a pale purple; the lip is 3 inches broad and 5 inches deep, of an intensely rich crimson colour at the top, gold at the side, and beautifully veined with gold in the centre and throat." In the variety shown by Mr. Wrigley the sepals and petals are much deeper in colour—a purplish crimson hue with lighter veins, the lip deep gold at the base and intense magenta at the tip, some of the colouring extending to the base of the lip. It was equally beautiful, but some better name might have been found than Wrigley's variety.

An Orchid that was greatly admired at the meeting named was *Lælia præstans alba*, *L. præstans* being now regarded as a variety of *L. pumila*, and *L. Dayana* is assigned a similar place. The variety *alba* (fig. 40) shown by Mr. W. Bull, is a delicate little gem, and one of the most charming of the small flowered dwarf *Lælias*. The sepals and petals are broad, pure white, the base of the lip also being white and finely contrasted with the rich crimson upper portion of the lip. The type of *L. pumila* has been found growing

upon trees in the Rio Janeiro province, at an elevation of 2000 feet or more. *L. præstans* came from Santa Catherina, but is not so well known in cultivation as *L. Dayana*. The variety *alba* was sent to Mr. Bull in June, 1838, probably from the same locality.

Another notable Orchid was exhibited on the same occasion as those above named—i.e., *Cypripedium picturatum* (fig. 41) from Sir Trevor Lawrence, Bart., M.P., and it also was awarded a first-class certificate. In shape and general characters the flower is suggestive of *C. Spicerianum*, especially in the dorsal sepal, which is white with green and purple veins, the central vein being strongly marked exactly as in that species. The petals are greenish at the base with a few crimson dots, the margin undulated, with some scattered dark hairs, the even polished lip of a purplish hue, as also is the staminode. It is a peculiarly elegant flower, and a good addition to the list of hybrids.—L. CASTLE.

CANKER AND ITS CURE.

THE word canker means a disease in animals and plants, and when it is seated deeply in the former its eradication is almost

and sandy, or wet, retentive clay—often water-logged; and as soon as the roots were removed into good surface soil disease disappeared. I beg to offer a few remarks from many notes taken from several districts in England and Scotland. When I was an underling in a first-rate Wiltshire garden there was a fine collection of hardy fruits—Apples and Pears especially—which evidently had been planted with much care; but rich soil, which caused strong, watery growth, which was annually cut back to keep the trees to a given size, caused ulceration in the trunk and branches and cracked fruit, often small in crop. Cutting away the roots entirely underneath and inducing them to become fibry near the surface changed matters speedily, and had permission been granted I would have operated on all the trees on walls and in the orchards as well, as few were entirely free from canker. Taking another case into consideration, I was entrusted to renovate an old place in East Anglia where espaliers had at one time been nearly perfect but had gone wrong by deep rooting into wet clay and hard cutting out of young wood annually. The removal of downward going roots and the placing of plenty of broken bricks and lime rubbish underneath and mulching on surface put an end to canker, and the wounds all healed.

Some years after I removed to manage a good Scotch garden,



FIG. 41.—CYPRIPEDIUM PICTURATUM.

impossible. It is caused generally from want of proper food, living in an unwholesome atmosphere, or neglect of cleanliness. With plants its cause is from the same sources, and the removal of the evils which cause the disease, when not beyond recovery, soon tell most potently on the plant. Causes do not always lead directly to the same effects. There may be exceptions, but seldom do we find unhealthy plants sound at their roots; and starvation, superfluous supplies of food and moisture, and stagnation caused by bad drainage, are some of the evils most generally met with which cause canker. Shrubs, trees, and pot plants of every description we have had under manipulation for canker, and have in every case seen the disease removed when natural laws, which had been violated, were righted.

The many interesting articles on canker of fruit trees I have read have revived afresh a subject which has given me an experience of a mixed character. Since my earliest recollections of work associated with practical gardening, and in nearly every case where canker has occurred, it has been traceable to soil strongly impregnated with iron, or roots growing into unsuitable subsoil—inert

where a clever predecessor had made strenuous efforts for years to establish a good collection of hardy fruits, and he did so with much credit to himself, but the handsome trees being mostly dwarf bushes 6 feet in height, and the same in diameter, would persist in giving way to canker. They had been planted high on a great depth of maiden loam, which gave a clean growth and healthy foliage, but in the course of years the roots found their way down into a subsoil of inert soil, sandy, with traces of iron through it. The bottom roots were cleanly cut away, and a layer of brick and lime rubbish firmly rammed below, with good soil from the surface placed next the roots. The change in the trees and fruit as early as the first season was patent, and though some of the branches were almost eaten through with the disease they began to heal as soon as the roots supplied with nutriment from the healthy soil only, and these being cut off from the poisonous soil in which they had been some time embedded, changed the character of the fruit as well as wood and foliage. Pears, Plums, and Cherries were manipulated piecemeal, extending over a period of several years, and fruit became abundant. Passing over time and distance, we had

some peculiar experience in Worcestershire, where new gardens, park, and grounds had been stopped during their formation, and while clearing away the work which had been going on for years, we found among quantities of shrubs, heeled in, a number of bundles of fruit trees among the trees and shrubs. They had been planted somewhere, but injured by sheep, and removed to the outward quarters where we found them. All that seemed worth planting were trimmed at the roots, dead branches removed, the mutilated stems washed and brushed over with lime. They were all standards, Cherries and Apples. They were planted in rich soil and mulched. In the course of two years afterwards the decaying bark was healed and the trees were in robust health, bearing abundantly, and called forth expressions of admiration from the late Archdeacon Lea, who was one of the best judges of hardy fruits I ever knew. His death we deeply deplore, and will miss him as a kind friend who commanded the esteem of all who knew him. Many horticulturists especially, will deeply regret his removal and lose his kind sympathy and judicious advice. Many singular episodes might be related which occurred in this Worcestershire garden while endeavouring to make a good fruit garden, but we pass on to our present position, where root lifting and pruning is at present going on apace, and can look on trees loaded with fruit which were left to go wild for over half a century, and were cankered so much that bark and wood were nailed over the wounds of some of the old trunks. Even old trees of the character indicated are not beyond a remedy, and their recuperative powers astonish me.—M. T.

MALVASTRUM GILLIESI.

It is well for the future of this little alpine that the evil odour which is generally associated with the use of an alias in human life does not follow the possession of a synonym in plant life. Were such the case the reputation of this little beauty would be hopelessly injured, as in addition to the name given above it is generally called *Modiola geranioides*, and at one time rejoiced under the name of *Malviscum geranioides*. I have no knowledge of the genesis of any of these names, having received the plant some three years ago from a most reliable source as *Modiola geranioides*, which I am bound to say is more euphonious than *Malvastrum Gilliesi*, which I have adopted on the strength of the well-known firm from whom I received my plant, and who now catalogue it under this title. Less musical this may be, but we may be thankful that *M. Gilliesi* is a native of North America, and not of Central Asia, or it might have laboured under some of the "owsks" or other combinations so frequent in the names of plants received through a Russian introducer.

This is one of the extremely small number of plants belonging to the natural order Malvaceæ which are worthy of cultivation on rockwork. Looking over an extensive catalogue of alpines the other day I noted with some surprise that this *Malvastrum* and *Callirhoe involucrata* were the only plants of this order catalogued. It forms a neat, dwarf, slender-looking plant some 4 or 6 inches in height, formed of finely cut leaves, bearing some resemblance to some of the *Geraniums*, or to one or two of the scented-leaved *Pelargoniums*. The leaves and stems die in winter, and in early summer new ones proceed from the root, which is tuberous, and bears a resemblance to a single tuber of a *Dahlia*. The flowers, which are of a beautiful crimson-purple with a fine satiny lustre, are about 1 inch across, and are freely produced over the plant on short stems raising the erect flowers well above the foliage.

It grows very freely on a high, dry, sunny part of the rockwork, in light, rich, sandy soil, and late in summer sends out runners, which will root at every joint. These I take off and insert in pots in sandy soil until fully rooted.

One weak point in *M. Gilliesi* is that it will not flower unless in full sun, and only when the sun shines, the flowers being easily destroyed by a heavy shower.

The summer of 1888 was a most disappointing one in this respect, as I had only one fully opened flower. This year, however, has recompensed me for last year's non-success, and so lately as October 6th I had the pleasure of seeing a flower fully open. So far as my experience goes the *Malvastrum* is perfectly hardy, and as it is now moderate in price should be more frequently met with.—S. ARNOTT.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 199.)

It does somewhat astonish us to find how slowly that valuable esculent the Potato advanced in public favour during the seventeenth century. Wits have attributed this to unfortunate methods of cooking. Early in the reign of Charles II. a Somersetshire

gentleman named Buckland called the attention of the Royal Society to this vegetable as one likely to furnish a staple article of food, and he urged those members who owned land to plant Potatoes freely, also to recommend the practice amongst their friends; but little seems to have been done, and Evelyn refused to take the matter up—indeed, he subsequently, in his "Gardeners' Kalender," wrote slightly of the Potato, telling gardeners to plant it in any soil, and dig up the tubers about November, when, few or many, there would be quite enough. Woolridge, in 1687, suggested that Potatoes might be grown in quantities to feed swine or cattle, and he adds the statement that some gardeners planted them in order to use them for forcing fruits, which seems somewhat ambiguous; but I presume they were allowed to decay, and then applied as manure to the roots of trees or plants in the early months of the year. That the London gardeners had acquired some skill in forcing by the middle of this century appears from an account of a banquet given to the king on April 23rd, 1667, when, amongst other fruits placed on the table, ripe Cherries and Strawberries are specified. From references made by some writers to the use of dung in forcing, it seems that about this time the gardeners not unfrequently placed manure against a wall of boards, and not directly in contact with the plants they wished to force, applying side heat to their frames, not bottom heat; these were often sunk deeply in the earth. It is likely that the dishes of early Peas, raised at a period when hothouses were certainly unknown, were obtained from plants set in pits and covered at night with cloths.

There was an increased cultivation of the Fig and Orange in the reign of Charles II. The fame of the orangeries at Kew, Beddington, and elsewhere made the Orange a fashionable tree, and numbers of young Oranges were brought over from Italy. These were planted in boxes, and placed in a row during the summer along the principal avenue of a residence, sometimes alternating with Figs similarly planted in boxes. Only two varieties were then known, the Black Syrian and the White Marseilles. They were also arranged along walls, but the yield of fruit was small. Melons were planted freely on the low ground near the Thames in Surrey and Middlesex. It is doubtful whether the gardeners succeeded with a plant which so much needs warmth. References to "King" and "Queen" Pines occur about this time. These, I think, were probably imported. Attempts may have been made to grow the plant here, but they hardly obtained fruit till a later period, when stoves had been contrived.

No important additions to the English stock of Apples and Pears seem to have signalled the reign of Charles, though what was first called Scudamore Crab, and afterwards the Redstreak, brought by that nobleman from France before the civil war, and for years confined to a few orchards, was distributed over the country. The Catherine Pear is said to have been named after the queen, a small early ripening sort, still supposed to be in existence. It was by the order of this king that lines of Apples and Plums were planted round St. James's Palace, which led many of the nobles to follow his example at their residences. A curious account is given by an old author of the spring garden at Vauxhall, laid out as a public resort, and planned in squares of about 20 yards each. As this chronicler notes that in one of these squares he saw growing Roses, Beans, and Asparagus, the arrangement then was apt to be rather mixed. More important is the fact that there were hedges of Gooseberries, so now this shrub has fairly arrived south. First cultivated in Lancashire it travelled slowly across England, and Ray mentions yellow, blue, white, and green, the yellow kind being most esteemed.

Towards the close of the seventeenth century quite thirty varieties of the Vine are enumerated, but not above a dozen of these had any importance. Lord Capel and Sir William Temple imported several varieties. The latter is credited with six, named Chasselas, Parsley, Frontignac, Amboyne, Burgundy, and Black Muscat. But to John Rose, at first gardener to the Duchess of Somerset, and afterwards to the king, belongs the credit of having, by his "English Vineyard Vindicated," published in 1666, encouraged the culture of what he styles the "Prince of Plants," and which he thought was falling into neglect. Also he was a dealer in Vines, for his book ends with the statement that "he had a plentiful stock of sets and plants of all those sorts which he chiefly recommended." His instructions are carefully given, and particulars added as to the varieties yielding most fruit, or best adapted for wine making. With the next and much advanced generation of gardeners Rose is linked by his connection with London, who worked under him when a young man. At the request of Rose he was sent to France so that he might inspect the Versailles gardens, and some others reputed to be examples of the art of laying out. Concerning Rose's skill in ornamental gardening we get little information, we read, however, that his lawns and walks were highly commended; also, it seems, he rather objected to borders, preferring to cultivate flowers in beds or plots. Rose died in 1677,

showing his interest in education by endowing a school at Amesbury in Wiltshire.

The Lettuce, a name found in old gardening books as "lactuse" or "lectuce," pointing evidently to its derivation from *lactuca*, was not much grown till after the restoration. An increased demand for this vegetable may have been caused by its repute as a remover of the effects of deep potatoes. Our gardeners had first some varieties of the Cabbage Lettuce from Holland, and these were succeeded by the Cos and Cicilian kinds, brought from the Levant or Italy. We should be surprised at the space allotted in the seventeenth century kitchen garden to the now neglected Rocambole, to the Leek, Onion, Chive, Shallot, and Garlic. The latter was much favoured, especially in the spring. And during the terror caused by the plague, milk in which Garlic had been boiled was freely used as a supposed preventive. Owing to the fancy our ancestors had for winter salads several plants were grown for this purpose, which have ceased to be in requisition. Our native species, the Burnet, was cultivated for winter cutting, as was also the Tarragon and other plants of the Cress tribe which could be forced by slight heat, such as the Rocket. The white Beet had been grown for some years, the leaves being put into soups. Though a native of Spain, it seems to have come to England by way of France. Tradescant the younger brought the red Beet from France or Italy, and planted it in his garden at Lambeth. It was eaten with bread like the Radish. Neither Turnips nor Carrots had as yet obtained any popularity, but the Parsnip recently introduced from Holland was in request, the roots being sometimes mixed in flour to make bread, and a decoction of the seeds given in fevers; this plant was also oddly called "Mypes." The additions to our list of exotics during this reign were not very numerous. The Tulip continued to be a favourite flower owing to the influence of the Tulip mania on the Continent. We find the varieties arranged in three groups as "early blowers," "late blowers," and "doubtful blowers." Of the *Ranunculus* twenty varieties were reckoned in 1665. The *Auricula*, which few would recognise by its name of "Mountain Cowslip," was only grown by a few gardeners. The showy *Pæony* was a favourite adornment of the flower beds near windows, and the pyramidal Bellflower or *Campanula*. A conspicuous flower brought from Virginia, *Lobelia cardinalis*, was occasionally to be seen beside the little ponds so common in gardens and the water-loving *Mesembryanthemum*. Not much heed seems to have been taken of the Rose; several of the noted Rose gardens about the metropolis were destroyed during the Civil war.—J. R. S. C.

TREE CARNATIONS.

MR. DUNKIN has recently spoken very favourably of the variety Valencia, an opinion which I am fully able to endorse. I had always thought it a fitting companion for that popular sort Miss Jolliffe in point of habit and floriferousness, but it possesses greater vigour, and bears larger blooms. Mr. Dunkin says some of the most beautiful of the varieties bloom but little until the spring months, a point I do not quite agree with him in, as I believe this failing might be overcome by early propagation and good treatment. I have for several years grown these plants for producing flowers through the winter months, and out of the several varieties cultivated I know of none that failed to bloom until spring, and I find that not only are they appreciated from now onwards till Christmas, but if procurable all the year round for buttonhole purposes.

The secret lies in early propagation, as Mr. Dunkin advises, selecting strong side shoots if possible during February. If the plants are grown in a light and airy structure the cuttings root readily at this period, while on the other hand, if they are crowded thickly and shaded by other plants, the growths are weak, long jointed, and soft, and are sure to collapse under the confined treatment required for striking. This fact at once creates necessity for a later "strike," and thus valuable time is lost. We have plants which are now blooming treated as above that have been standing outdoors since the beginning of July in a sunny position, and from some old plants we have gathered blooms daily for several months, and yet they bid fair to continue throughout the winter.

Unfortunately many of the strong-growing sorts produce "grass" so very sparingly that unless numbers of plants are grown propagation is of necessity slow, and a few older plants may well be retained for stock purposes, and it may be said that although the individual blooms are smaller they are given with greater freedom than from younger plants. I have had from two to three dozen blooms expanded at one time from plants in 6-inch and 7-inch pots, proving that large pots are unnecessary if the plants are liberally treated with manure in liquid form. Jensen's fish

manures appear to suit them admirably, either as a top-dressing or in a diluted state, as I have noticed when these manures were exclusively applied the plants assumed an unusual vigour. The following are among the best I have grown—viz., Col. Cox, bright scarlet, large bloom; Coronet, deep scarlet; Mrs. Oldacre, bright rose; Bright Phoebus, a great favourite, the blooms large, of good shape, and the colour intense, vigorous, but of dwarf habit; Gipsy, dark crimson, good; Laura, pink, a pretty fringed flower; Worthington Smith, scarlet; Brunette, maroon, distinct; Sir Charles Wilson, rose large fringed bloom; Incomparable, a magnificent flower, but the habit of the plant too stiff, and grows very tall; Belle Rose, an old yet valuable sort, and beautifully scented.—W. S., Frome.

IN THE GARDEN OF ENGLAND.

By common consent and general acceptance this term applies to the fertile and fruitful county of Kent. If there is one part of Kent more famed than another for the production of fruit trees it is Allington, near Maidstone; and if there is one Kentish name more familiar than another to fruit growers, it is that of Bunyard. The "Old Nurseries," Maidstone, the head-quarters of the firm of Messrs. George Bunyard and Co., were established upwards of ninety years ago, and for three generations the trade was general and local. It is general and local yet, but far larger "round home" than ever it was before; and in addition to that, one particular branch has become in the widest sense of the term national—the trade in fruit trees. This great extension is the direct result of the technical skill, energy, and enterprise of the present chief of the establishment—or it might, perhaps, be said proprietor, for it does not seem easy to trace the "Co." beyond the experienced co-workers, or heads of departments, in the different branches of the business. Mr. George Bunyard has done a great work in the course of twenty years to have acquired such an extent of land, stocked as it is stocked to-day, and won for himself a name that is so widely known in the domain of horticulture. How he has done it none but himself can tell, but it could not have been accomplished if he had not been a devoted lover of fruit, a good judge of procedure, and a pertinacious worker in that which he set himself to do.

The home nursery is in the town, near the South-Eastern Railway station. The site has been acquired by purchase and handsome premises built. There are other places of business in the town, and adjacent thereto a considerable extent of land devoted to general stock, but the great manufactory of fruit trees is one or two miles in the opposite direction—Allington. Now if anyone wishes to go direct to the fruit trees by rail from London he must not "book" to Allington, because there is no station of that name, nor to Maidstone, as there is the road journey indicated, but to Barming. Another thing, if an intending visitor wishes to ascertain by telegraph a convenient day and time to arrive, he must not think the address of "Bunyard, Maidstone," will suffice, for a message so addressed will not be delivered. This the writer learned from experience, then a few days afterwards found a notification in the very last corner of the catalogue, stating the fact, and informing those who turn over the pages to the end that telegrams must be addressed "George" Bunyard; there is no "Co." there, but presumably more Bunyards at Maidstone. If I were "George" I should have the very useful information to visitors on the first or second pages of the work, for a "work" it is, and not a mere list of names and prices, but for some occult reason he does not commence "paging" till he reaches "5," and with that figure he begins, though most persons begin with "1." In the examination of a witness in a trial case on the stage he is asked his age by the judge. "Thirty-five, my lord" is the reply, quickly adding, "I should be thirty-seven, but I have been laid up for two years." Mr. Bunyard has not been "laid up," or he would not have done what he has, but his printers have been giving the first four numerals a rest. The reader, however, loses nothing, but may obtain much information for 6d., and as many trees as he likes, or as his purse allows, up to 400,000. The Allington Nursery alone comprises 76 acres.

Arriving at Barming station, on the London, Chatham and Dover railway, the visitor may be among the trees in two minutes, for he has only to ascend half a dozen steps and he will be in the nursery. To the right and the left he will see a forest of trees, and as he passes along to higher ground still another forest ahead of him. From the vantage ground he will also see a beautiful and breezy country, open to all the winds that blow, with a stiff keen rush now and then between the hills from the German Ocean. The conditions then are present for ripening the growth that is produced by the not "fat" but fertile soil. It is fruit tree soil beyond a doubt, and the best is made of it by free working. The scuffle is always at work in favourable weather between the rows, horse and man moving briskly, as if they enjoyed the whisking of the branches. The man is not muzzled, so it seems he can be trusted among the fruit, for there is no lack of this on some of the young trees; but the horse has to submit to the same treatment as the London dogs, and if not muzzled he would probably do more pruning than the master approved. Mr. Bunyard does not believe in weeds, and though it must be costly keeping them in subjection, it is more costly still leaving them alone to eat the virtues out of the soil that the trees require. The growth they make would satisfy the most exacting, and it is largely due to the surface-stirring, though not wholly. The land no doubt contains potash, and that is what fruit trees like. If this mineral did not

abound in the district the pastures would not be so full of Clover, and the trees could not grow so well. They are strong without frothiness, and extremely stout in the foliage. Neither blight nor canker can be seen in a ten mile walk along the paths between them. Most interesting it is to walk down a 20 acre piece of yearling Apples, the first growth from the bud, and to note the evenness of the varieties and the character of each in foliage and relative vigour; some rows strong and stately, others of medium stature; some with broad dark leaves, others lighter and pointed. A rogue in any of these rows would be "spotted" in a moment. Keen-eyed experts like Mr. Bunyard and his men know the varieties of fruits by their leaves and wood a great deal better than thousands of persons who purchase and plant know them by their fruit; yet all are either plainly named or numbered, the old hieroglyphical crosses and notches being abandoned; it is therefore not possible to see how mistakes in nomenclature can occur. Then follow forest-like masses of two-year-olds, in which the habits of the varieties are displayed, upright or spreading, precocious or otherwise in forming fruit buds. The contrast in those respects is very striking between, for instance, the sturdy and bristling Lane's Prince Albert and the quicker-growing and slower-bearing Blenheim Orange.

The stock of Apples we are told numbers 100,000, and judging by the extent of land occupied by the trees the visitor would conclude there are more. Among the newer sorts, freely bearing on young trees—an excellent indication of coming usefulness—Bismarck is prominent by its large red fruit. This Australian Apple was first exhibited by Messrs. Veitch & Sons, and certificated at the Crystal Palace. It has often been represented by orchard house fruit at shows, and not a few admirers have concluded the variety is not hardy enough for our climate, but no Apple bears handsome fruit more freely than this does in the open quarters at Allington, and Bismarck can scarcely fail to become a favourite in the market. Belle Pontoise also bears large, flattish, and most attractive fruit very freely. As a market sort *par excellence* Mr. Bunyard places the new variety Royal Jubilee quite in the front rank. The young trees bristle with fruit buds, and the golden conical fruit is tempting in appearance, and though ready for use early keeps a long time. Lady Sudeley (originally Jacob's Strawberry) is in great force, and sure to be extensively planted when its merits are fully recognised. Freedom of cropping, richness of colour, and good quality are its characteristics. It will probably be seen in piles on fruit stalls and costermongers' barrows in a few years time, than which there is no better test of usefulness. Wealthy, an American variety, bears highly coloured fruit abundantly, and thus recommends itself. Mr. Bunyard regards Newton Wonder with much favour as a valuable late keeping Apple. Laxton's September Beauty is noticeable by its glossy red fruit, and the certificate it won is evidence of value. Baumann's Red Winter Reinette bears heavily dark crimson fruit, and is a distinct variety of great promise. The Scarlet Costard and Gascoyne's Scarlet are highly coloured, while Hornead's Pearmain is highly regarded in the nursery. Of better known kinds bearing freely, among many sorts that are barren, are Pott's Seedling, Lord Grosvenor, Ringer, Worcester Pearmain, Duchess of Oldenburgh, Stirling Castle, Grenadier, Lord Derby, Lane's Prince Albert, Brownlee's Russet, Cox's Orange Pippin, Improved Kerry Pippin, Hubbard's Pearmain, and Scarlet Nonpareil, all good varieties, and Bramley's Seedling is in great demand for orchards. All forms of trees are grown on different stocks, including standards on a good form of the Paradise, covered with fruit all up the stems like "ropes of Onions"—favourites with owners of small gardens. Several Apples are grown in pots, and bearing splendid fruit in the orchard house.

Pears are not grown so extensively as Apples, yet there are 50,000 of them. Rivers' Fertility is taking the lead among orchard standards, and for the same purpose Beurré Bosc, Clapp's Favourite, Pitmaston Duchess, Hesse, Beurré de Capiaumont, Crawford and Lammas are in great demand. For garden culture as pyramids, cordons and espaliers, those bearing the most freely this (unfruitful) year are Beurré d'Amanlis, Durondeau, Duchesse d'Angoulême, Fondante de Cuerné, Emile d'Heyst, Maréchal de Cour, Louise Bonne of Jersey, and Marie Louise d'Uccle. Particularly fine in the orchard house are Pitmaston Duchess, Beurré Diel, and Doyenné du Comice. Among the less known varieties Aspasia Aucourt, Buerré Baltet père, and Fondante Thirriott are thought highly of at Maidstone.

Now we pass to Plums. There are acres of trees, the number being 150,000, and 60,000 Damsons. Victoria leads the way for usefulness, but the Czar and Kentish Bush Plums have to be grown by the thousand, all the choice garden varieties being provided in proportion to the demand. Rivers' Monarch, Cox's Emperor, The Sultan, Grand Duke (fine late), and the Gages are evidently required in considerable numbers and are good. The Farleigh is the chief Damson (40,000 trees), and next to it the Shropshire or Prune for market purposes.

As may be expected in the great Cherry county trees of the different varieties have to be extensively provided. There are acres of fine standards on tall stems, while pyramid, trained, cordon, and orchard house trees are represented in the leading varieties, but the Bigarreus appear to predominate in the stock of 50,000.

Peaches, Nectarines, Apricots under glass and outdoors in the form of trained trees of various heights and shapes, also as bushes or pyramids, are provided in great numbers, 10,000 or more; the Gladstone and Waterloo Peaches are increasing in demand yearly as their merits become recognised. Of the older Peaches Royal George remains the greatest popular favourite. Figs are grown in pots somewhat extensively, also Vines, and Medlars, Quinces, Mulberries, and all sorts of bush fruits have place in the emporium.

Long marginal borders of choice Conifers, the bluish Cupressus Lawsoniana Alumni being conspicuous, alongside the grassy promenades add a feature of interest, and in the summer and through the autumn large squares of Roses afford blooms for all comers and more than they can take away. Roses on their own roots grow here quite as well as on any stocks, if not better. The free flowering China Rose Louis Phillipe appears to be a feature, and the plants are laden with blooms till winter. Spiraea Bumaldi one of the dwarfest and most attractive of the family, is extensively grown for border decoration, and is highly worthy of cultivation.

The span-roofed orchard house, 100 feet by 30 feet, contained three rows of Peach and Nectarine trees down the centre, trained "riders" of various heights and ready for bearing at once, the sides being occupied with Apples and Pears in pots bearing "exhibition" fruit. A house of the true Rollisson's Telegraph Cucumbers was bearing its third crop; the fruit 20 to 26 inches long ripening for seed, and 1 Donald Beaton's outdoor Ridge Cucumbers, which is quite one of the best, was being harvested. Tomatoes on banks are well worthy of mention, the growths trained to sticks or wires about 18 inches above and parallel to the ground being roped with fruit, Laxton's Open Air the favourite variety.

Very interesting, also instructive, is it to spend an hour in an establishment such as this with one of the recognised masters in the art of hardy fruit culture, not an "old" master, but in the prime of life, with still, it is hoped, a long future before him. The telephone connects Allington with the head quarters in Maidstone, and in erecting offices for the transaction of business in the nursery the men have not been forgotten. The necessary provision for their comfort has been made during the periodical rests, and they no doubt work the more actively between them, for workmen worthy of being employed are appreciative and study the interest of those who show themselves well disposed towards them.

Some reference ought to be made to an adjacent fruit garden planted by Mr. Bunyard about seven years ago on the estate of Mr. Brassey—to the heavily laden Queen Caroline, Lord Derby, and other profitable Apples, and the bush fruits below, which alone have been handsomely remunerative; but more space must not be encroached on, interesting as the record might be, and Mr. Bunyard is thanked for his kind attention to a sudden caller at his nurseries.—F. R. H. S.

BLACK HAMBURGH GRAPES AT DRUMLANRIG.

YOUR correspondent "A Kitchen Gardener," who has lately visited Drumlarnig Gardens, seems astonished at the grand bunches of Black Hamburgh Grapes he saw there; and no wonder, when he informs us, "According to some authorities the cultivation of old fashioned high class Black Hamburgh Grapes," mark you—"is almost a lost or unknown art," and he verily "believes there is some truth in their assertion. In fact," he writes, "I know instances where the Black Hamburgh was discarded to give place to more showy varieties." This, I am sure, is news that few gardeners will be prepared to receive, let alone credit.

Oh! ye degenerate sons of Adam, "A Kitchen Gardener" must wake you up and teach you the lost art of growing "old fashioned high class Black Hamburgh Grapes." I know that Mr. Thomson's Grapes are first rate examples of the variety in question, and are well worth going a long way to see. But it is a calumny on gardeners to say that the art is lost, or the Grape in question is neglected or discarded on that account. I believe if a census was taken of all the establishments in the country where Grapes are grown, it would be found that there were not six places in the kingdom where the Black Hamburgh was left out of a collection. I am curious to know what some of our great horticultural teachers will have to say on the subject, and more especially Mr. Muir of Margam, who, we have been told, has grown Black Hamburgh Grapes to something like perfection without the aid of fire heat, in the climate of South Wales.—FIFESHIRE.

HORTICULTURAL CLUB.

THE first monthly dinner and conversazione for the session 1899-90 took place at the Club rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday evening. The Rev. W. Wilks, in the absence of Mr. John Lee, occupied the chair; and there were present the Rev. F. H. Gall, Messrs. Girdlestone, H. J. Veitch, H. J. Pearson, George Paul, J. H. Veitch, T. B. Hall, T. Francis Rivers, James Walker, Geo. Prince, A. Prince. The Very Rev. the Dean of Rochester; W. Herbert Fowler, Esq., Claremont, Taunton; and J. H. Stott, Esq., The Lindens, Preston, were elected members.

The subject for discussion was "The Dressing of Roses," which was introduced by Mr. T. W. Girdlestone, who stated that the subject had only very recently cropped up, and it was, he believed, practised mainly amongst northern growers, and was not much adopted amongst amateurs. He said that in all florists' flowers there was a certain amount of manipulation practised by which petals were brought into position, and a flower made to appear somewhat larger than it otherwise would; but what he alluded to was a practice by which the whole character of the flower was altered, as, for instance, where a high pointed centre, as in Alfred Colomb, was so manipulated by having its petals turned inside out as to appear like A. K. Williams, or where a small bud of a Tea Rose, not an inch across, was so opened out as to make a flower some 2 or 3 inches across, entirely altering its character.

He strongly objected to this, not only because it spoiled the beauty of the flower, but also because it gave the public a false notion concerning them. They see these flowers, named, in the stands; they order them, and are very much surprised and disappointed to find them entirely different in their gardens. He did not know to what extent it had gone, but he had seen at the Crystal Palace Show a box of Teas so manipulated that it was hardly possible to recognise the flowers, and he therefore thought the time was come to pronounce decidedly against it. The National Rose Society had carefully watched over the interests of the flower and everything connected with it, and he believed that the Committee of the Society could put its foot down on a practice which he believed to be most hurtful to the cultivation of the flower. A very interesting discussion followed, in which several of those present took part. Mr. George Paul stated that he believed whenever this excessive dressing took place in any flower, it tended to its going out of favour. Take, for instance, the Carnation. This was once a favourite garden flower, but when exhibitors so dealt with it that its character was entirely altered it went out of favour, and so at the present there are a few who grow it and exhibit, but it is the self and border varieties that are now becoming popular—flowers that need not be dressed, but allowed to grow naturally; and so he believed it would be with the Rose, although it would be difficult to drive that out of favour; but there was danger, unless the practice were stopped, of these grand flowers being neglected. Mr. T. Francis Rivers said he could hardly believe it possible that an exhibitor could dress a stand of seventy-twins in the time allotted to him after he had placed his flowers in the box, he seemed to advocate the cultivation of garden Roses, and spoke quite enthusiastically of Roses which he had 20 feet high, clambering over some old Pear trees and regularly festooned with flowers.

Mr. T. B. Hall said that he had often watched with pleasure and some degree of envy a well known exhibitor going over his box of Roses before the judges came round, but in these was nothing unfair, the character of the Rose was not altered, but only a little additional charm given to it in its natural character. Mr. Harry J. Veitch alluded to what had taken place with regard to the exhibition of Orchids. They were not dressed certainly, but where prizes were offered for say six Orchids the custom grew of placing a large number of small plants in a huge pan filled with small plants, and then it became necessary to make two classes—one for plants naturally grown as single specimens, and one for the "made up" exhibits. The Rev. H. H. D'Ombra as Hon. Secretary of the National Rose Society said he was sure that the wish of the Committee would be to utterly discountenance this injurious practice by giving instructions to the judges; and he believed that the best way would be to pass by all such flowers as if they were not exhibited; and as it had been with gumming, so with this, he believed that we should have no more of it, and he was quite sure that the discussion would greatly strengthen the hands of the Society in dealing with the practice. After several other members had spoken Mr. Wilks proposed a cordial vote of thanks to Mr. Girdlestone, and a very pleasant evening was brought to a close.

PEACHES.

FEROUS SULPHATE FOR "YELLOWs."

I GLADLY comply with the request of Mr. T. Welch, page 311, in telling him through the medium of the Journal how I cured the Peach tree mentioned by Mr. Wright. It is only fair to say I was led to try this remedy through reading an account of some experiments by Sachs, written by Mr. G. H. Marshall Ward in the *Gardeners' Chronicle* for April 13th, 1889.

One of our Peach trees, a Princess of Wales, was badly attacked with "yellows" this spring, owing, as I believe, principally through a severe check in November, 1887, when lifted for the purpose of draining the border, &c., followed by a bad season in 1888 for maturing the wood. The house was started December 1st, 1888. The sulphate was applied early in May by removing the soil over the greater part of the roots without injuring them. Three-quarters of a pound was then dissolved in a little hot water, and enough cold water was added to make about 10 gallons in all. This was poured over the roots, and a similar quantity of clear water was then put on to wash it in; the soil was in a previously moist state from a recent watering. After this the top soil was returned again as before, and in a short time a considerable improvement was apparent, and eventually the tree completely recovered. That is how we cured our tree. It does not necessarily follow that all cases of "yellows" can be cured in the same way. The above tree was growing in a well heated house, and in a thoroughly well drained border. I am of opinion that "yellows" is caused in many instances by the roots getting in an unhealthy state from bad drainage and similar causes. Ferrous sulphate will be of no avail in such cases until these defects are remedied. Mr. Welch says he will partly lift his trees soon; if he thinks the drainage or border is bad he will do well to lift them entirely and make everything right. If carefully done and replanted as soon as possible no harm will befall the next crop in consequence, provided the trees are started gradually, and not pushed into growth beyond what the roots can maintain. It is easy to see when the roots are beginning to grow freely by the corresponding advance in the young growth. I have often lifted trees that had not been disturbed for years, and have sent some of them long distances by rail, and find the Peach and Nectarine will bear removing and lifting far better than most people would imagine.

I would not advise your correspondent to plant Lord Palmerston

Peach; its great size is its only recommendation, its quality is poor in the extreme. Princess of Wales, which is one of its parents, is far preferable and ripens about the same time. Another good late variety is the Nectarine Peach. I am unable to give any opinion on Reine des Vergers.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*

I KNOW nothing of Peach Reine des Vergers, but would strongly advise Mr. Welch not to invest in Lord Palmerston. We are just about to destroy a rather large tree of it which has never given a fruit fit for dessert, and we consider a south wall too valuable for growing Peaches for any other purpose. Lord Palmerston is only a few days later than Walburton, but bears no comparison with that variety.—E. BUTTS, *Leigham Court Gardens, Streatham Hill.*



NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the Floral Committee of the above Society was held in the Royal Aquarium, Westminster, on October 9th at 2 P.M., when the following members were present—E. Sanderson, Esq., in the chair, Messrs. W. Holmes, R. Dean, J. P. Kendall, G. Gordon, L. Castle, R. Owen, C. Swift, J. Mardlin, G. Stevens, T. Bevan, H. Cannell, J. Wright, and C. H. Payne. Messrs. H. Cannell & Sons, Swanley, had an interesting collection of fine Chrysanthemum blooms, for which a vote of thanks was accorded. Mr. R. Owen, Maidenhead, also exhibited several varieties. Messrs. Hawkins & Bennett, Twickenham, had a stand of twelve handsome blooms of Chrysanthemum Mrs. Hawkins (vote of thanks); and Mr. G. Stevens, Putney, also contributed cut blooms. Messrs. Cannell & Sons showed blooms of a Japanese variety named *Meto*, with white irregularly cut florets faintly tinged with red. The bloom was somewhat flat, but appeared to be distinct, and the Committee expressed a wish to see it again at a later meeting.

A plant of a Japanese Chrysanthemum (unnamed) was sent by Mr. Briscoe Ironsides, Fooks Cray, which was said to have been raised from a single leaf without any bud or portion of the old stem being attached. The leaf was inserted in a thumb pot on January 20th, and potted into a 60-size pot in the first week of April, and from a sucker produced at the base the plant had resulted. It had a strong stem 2 feet high with abundant foliage, a number of suckers at the base, and one large flower at the apex of the stem. It was stated that other leaves had been rooted but discarded, as the one specimen was sufficient for experimental purposes. A vote of thanks was accorded to Mr. Ironsides for his interesting communication. Only one certificate was awarded—namely, for the variety,

Jeanne Marty (R. Owen).—This is a Japanese Anemone, one of Audiguier's varieties sent out in 1886, but although it has appeared in a few exhibitors' collections it is not by any means well known. It was, however, included in the National Society's Catalogue of Select Varieties for 1888, and is thus described:—"Blush white, dropping guard florets, lilac disc, large, with full high centre; midseason, rather tall."

A MEETING of the National Society's General Committee was held in Anderton's Hotel, Fleet Street, on Monday, October 14th, at 7 P.M., E. C. Jukes, Esq., in the chair, when there was a large attendance of members, and a considerable amount of important business was transacted. Mr. Holmes read the minutes of the last meeting, which were duly confirmed, and he then referred to some correspondence he had had with the officials of a new Society in Philadelphia, who required some rules to guide them, and had adopted those of the National Society as a suitable foundation. The subject of the medals was next considered, and samples from two firms having been submitted, it was subsequently resolved, on the motion of Mr. Rundell, seconded by Mr. Prickett, that the order be given to Messrs. Restall.

The Hon. Secretary referred to the Chrysanthemum Centenary Celebration to be held at Ghent, and mentioned that several members of the National Committee had been appointed judges, a compliment to the Society which ought to be appreciated. At a later stage of the proceedings the Chairman proposed that the members of the Committee who had been requested to act as judges at Ghent be officially appointed a deputation from the National Society, and after some discussion approving of this course, it was adopted unanimously. Mr. C. Harman Payne also referred to some correspondence which had taken place between himself and the Ghent officials, who were very desirous of having English exhibits and exhibitors at their Show. Mr. Payne stated that he had been in communication with the National Chrysanthemum Society of the United States, and some important help was likely to be rendered in the determination of the names and synonyms of American varieties. Three members were proposed to fill a vacancy in the General Committee caused by the retirement of Mr. Gilbey, who has removed to the north of England, and is consequently unable to attend the meetings. Mr. Briscoe Ironsides was ultimately elected, and Mr.

Boyce was similarly elected on the Floral Committee. Mr. G. Gordon next reported that Mr. L. Castle, Mr. Payne, and himself had, in accordance with instructions of the General Committee, prepared a supplement to the catalogue including the best of last year's varieties, and it is now published.

Mr. Holmes reported with regard to the Provincial Show at Hull that he had lately visited the officials there and satisfactorily arranged all the details. He considered the buildings amply large enough for a first-rate show, and he mentioned that arrangements were being made for a Conference that was likely to prove of an exceedingly interesting character. Mr. E. C. Jukes would preside, and Mr. J. Wright with Mr. G. Gordon would contribute papers, and the mention of their names was a sufficient guarantee that the subjects would be thoroughly well treated. Entries for competition could be made through Mr. Holmes up to within three days of the Show, in compliance with the National Society's rule, but the Hull Society required a week's notice of entry. It was proposed that the 5.45 P.M. train to Hull on November 20th would be a convenient one for those intending to visit the Show, and if he received sufficient notices from members and visitors he could engage a saloon carriage, as on the occasion of the Sheffield Show last year. He further suggested that the members of the Floral Committee who may be present at the Hull Show as judges or visitors might be authorised to deal with any new varieties there exhibited, and to make awards in the same way as in London. This was formally proposed, seconded, and carried.

In reply to some questions asked respecting the November Show at the Westminster Aquarium, it was explained that it is not at all likely the music licence will be withheld, and even if it were they would still be able to hold flower shows and similar gatherings. Some proposals were made with regard to entertaining the Floral Committee at lunch on the occasion of the November Show, and as that is a very busy day it was decided that a complimentary meeting and lunch should be held on December 11th. After the election of several members, bringing up the total to 626, the amateur question cropped up again, the Hon. Secretary having received a letter from one intending exhibitor, who had been away for three weeks, and employed a man in the meantime to water the plants. Another had been away for six weeks, and similarly engaged assistance in his absence. It was resolved that the Hon. Secretary should be empowered to determine in cases of this kind whether a person was entitled to exhibit as an amateur or not, as it was impossible to frame a rule to meet all cases. The usual vote of thanks was accorded to the Chairman, and the meeting concluded about 9 P.M.

CHRYSANthemum CONFERENCE, CHISWICK.

NOVEMBER 5TH AND 6TH, 1889.

At a meeting of the Royal Horticultural Society's Executive Committee, October 8th, 1889, there were present Mr. Shirley Hibberd (in the chair), R. F. Jameson, L. Castle, C. E. Pearson, J. Douglas, N. Davis, C. Paul, N. Holmes, W. Wilks, T. B. Haywood, H. J. Veitch, J. Wright, C. Orchard, and W. Wildsmith.

The Chairman suggested that the Exhibition should comprehend six groups of subjects, and that these should be examined by committees of selection, who would award certificates of merit to the best varieties in each group on the plan of operations at the late Vegetable Conference. The foregoing being agreed to, groups and Committees were arranged as follows:—

(a) Varieties adapted for garden decoration. Committee: Messrs. H. Cannell, W. Wildsmith, H. M. Pollett.

(b) Varieties incurred for specimen blooms. Committee: Messrs. J. Wright, D. Donald, W. Mease.

(c) Varieties of Japanese for specimen blooms. Committee: Messrs. W. Holmes, E. Wills, R. F. Jameson.

(d) Reflexed, Anemone, Pompon, Pompon-Anemone, and single varieties for cut blooms. Committee: Messrs. C. Orchard, L. Castle, N. Davis.

(e) Varieties of all classes for trained specimen plants. Committee: Messrs. E. Beckett, E. Berry, J. Laing.

(f) Varieties of all classes for decorative plants. Committee: Messrs. C. Herrin, R. Owen, W. Furze.

Referees: Messrs. H. J. Veitch (Chairman), F. W. Burbidge, J. Doughty, R. Parker, J. Lyne, E. Molyneux (Secretary of the Conference), C. H. Payne, and W. Piercy.

It was finally arranged that the Executive Committee and Committees of Selection should meet in the vinery at Chiswick at 11 A.M. on November 5th.

BIRMINGHAM CHRYSANthemum SOCIETY.

THIS Society have determined to celebrate the centenary of the Chrysanthemum in a most liberal manner. The Show takes place in the Town Hall, Wednesday and Thursday, November 20th and 21st, and for forty-eight cut blooms, twenty-four incurved and twenty-four Japanese, the substantial prizes of £25 for the first, £15 for the second, £7 for the third, £4 for the fourth, £2 for the fifth, 30s. for the sixth—a total of £54 10s., the greatest amount ever provided in one class, and ought to induce a strong competition among the leading cultivators.—URBANUS.

LEEDS PAXTON SOCIETY.

WE are informed that a Chrysanthemum Show under the auspices of this Society will be held in the Town Hall, Leeds, on November 12th and 13th, and that good prizes will be offered for cut blooms, but we

have not yet received a schedule. Mr. T. Bonsall, Elmet Hall Gardens, is the Secretary.

TEDWORTH GARDENS, WILTS.

VISITING this secluded and picturesque part of Wilts, and having heard many speak in praise of the Tedworth Gardens, the residence of Sir J. Kelk, Bart., our curiosity was gratified by a cordial invite from Mr. G. Inglefield, the head gardener, to inspect the same. Accordingly, on a fine morning in this beautiful autumn weather we found ourselves at Ludgershall station and the garden cart awaiting our arrival. The drive to Tedworth is about three miles up and over the Wiltshire Downs, commanding on all sides splendid views of the surrounding well-wooded country. On entering the park by the main lodge gates we proceeded up a long avenue of thriving Limes, which, though only planted eight years ago, already give welcome shade and are getting arched overhead. Turning to the right we were met by the genial gardener, who conducted us to the gardens. The first noticeable feature was the Chrysanthemums staged in the framing yard to the number of about 600. These we found to embrace most of the well known varieties. We noticed Avalanche, Violet Tomlin, Mrs. F. Jameson, E. Molyneux, W. G. Drover, Madame Baco, &c. All the plants were in the best of health, strong wood well ripening, the foliage presenting that healthy though leathery appearance so much sought after by the best growers. We do not imagine Mr. Inglefield need fear to compete with the leading exhibitors if, as seems probable, his plants continue in their thriving condition. Entering the walled-in gardens, some two acres in extent, we passed through the vineries, finding houses for the culture of Muscat, Black Hamburgh, Gros Colman, and other Grapes. Fruit culture under glass is evidently a specialty. The bunches of Muscats were the largest seen by us this season. In the Peach houses the late sorts were a prolific, fine shaped, and well coloured crop. The last house in this range we found stocked with pot Figs giving promise of an abundant crop for next season. The stove house next claimed our attention, and contained well coloured Crotons and Dracenas; also healthy young Palms, with a good assortment of tropical plants. The fernery was well stocked, Adiantum farleyense being especially noticeable. The Begonia house elicited our warmest admiration, containing as it did a splendid assortment of the best double and single varieties; some of the latter Mr. Inglefield planted out in four large beds in front of the mansion and they looked superb. The next house contained a fine collection of Orchids. In the large Camellia house we found thriving specimens from 8 to 10 feet high with glossy foliage and well set with buds. A very large Rose house contains standards in the centre of the best sorts, and springing from the sides well overhead Maréchal Niels, &c. The remaining portion of the kitchen gardens presented a neat appearance. On the fine lawn fronting the mansion are dotted specimen Conifers, and several carpet beds attract attention. The area of the estate, we were informed, is 7000 acres. On returning to the gardener's house we observed that, besides, potting sheds, offices, &c., were amply provided. Then after partaking of the hospitality of our host and hostess the gardener's cart again safely conveyed us to Ludgershall station, whence we departed by train for fresh fields and pastures new, fully satisfied, however, it would be some time ere we should have the pleasure of viewing the equal of Tedworth.—TWO JOLLY GARDENERS.

NICOTIANA AFFINIS, LONGIFLORA, OR PERSICA?

IN perusing the "Floricultural Cabinet" for 1833, I came across two notices given there of a Nicotiana, which struck me from the descriptions as bearing a very close resemblance to the plant now so popularly known as Nicotiana affinis, and brought prominently before the public under that name a few years since. I trust it will not be deemed out of place here to quote the full extracts given in the above work. The first is an extract of the description of a plant figured in Edwards' "Botanical Register" for June, 1833, edited by Dr. Lindley. "Nicotiana persica, Shiraz Tobacco.—It is rather a handsome annual, exhaling a faint but pleasant odour in the evening, at which time its flowers are in perfection. In Persia it grows 3 or 4 feet high. Flowers: Petals, white inside, green outside. Culture: It requires a dark, rich soil, and most abundant watering during all the season of heat." The second notice is an extract from Sweet's "British Flower Garden" for the same month, June, 1833, edited by D. Don, librarian to the Linnean Society, and reads thus:—"Nicotiana longiflora, Long-flowered Tobacco.—This plant is a half-hardy annual, thriving best in light rich soil, and is increased by seeds. It is a native of Buenos Ayres, where it was discovered by Mr. Tweddie."

Up to this point, from the above descriptions, it does appear there were two distinct varieties, although it must be observed that the colour of the flowers of N. longiflora is not described. In October of the same year there is an article in the same journal on the "Treatment of Nicotiana longiflora, Long-flowered Tobacco," and the writer there said, "That in the first week in May he turned out six plants into the open border under a south-aspected wall; the soil of the border is annually enriched during winter or spring with leaf mould and well rotted cow dung. The plants soon took advantage of the new situation, and by the end of July each was 4 feet high, and spread proportionally, producing hundreds of pure white flowers at the same time. They are slightly fragrant. When the sun is powerful the blossoms close up for almost three hours about the middle of the day, but during the other part are fully expanded, and towards evening the plant has a most beautiful

appearance." It does appear singular that there should be figured in two distinct journals in the same month and year two plants answering to the character of the plant now known as *N. affinis*, and then an article appearing only four months afterwards further describing *N. longiflora*, all of which descriptions give me a suspicion that there existed only one variety at that time, but under two names, and, if not? one is lost while the other has been brought prominently forward, and become a general favourite amongst us after the lapse of half a century. *N. affinis* has long terminal tubes which would not be misnamed if known as *longiflora*. It is also sweetly scented, and only expands of an evening or early morning, closing up during sunshine after the manner of the plants described in the works named for 1833.

I have not the facilities for pursuing this subject farther, but some of your readers may be able to compare *N. affinis* of to-day with the original figures of 1833, of *persica* and *longiflora*.—J. W. MOORMAN.

CACTUS DAHLIAS.

WE grew long rows of these this season, many more plants than formerly, and nothing in the open has proved so attractive or serviceable. All are more or less abundant flowering, and whole basketfuls could be cut, towards the end of the season especially, without detracting much from the appearance of the plants. For large vases and church decorating purposes these Dahlias are of the greatest value, and probably have been more extensively and generally used this season than at any previous time. Compared with the Cactus varieties so called, the single Dahlias are deficient in merit, and it is surprising how rapidly the latter have lost ground in public estimation. At the present time (October 3rd) the good old Constance is perhaps the most useful, this variety invariably flowering very freely, the blooms also being more nearly pure white than earlier in the season, cooler weather evidently best suiting it. Henry Patrick we were led to believe will soon supersede Constance, and it is certainly an improvement on it, the flowers being more freely produced, especially in the early part of the season. They are of good form and pure white. Altogether it is a most desirable variety, and invaluable to wreath makers. A. W. Tait grows taller than either of the foregoing, and is free flowering. The blooms are moderately double, with finely cut or fimbriated florets, the colour being pure white. Mrs. Hawkins is the greatest favourite of all with the ladies. It is of moderate height, very floriferous, the individual blooms being large, not too double, of good form, and of two shades of colour—viz., sulphur yellow suffused with pink. We cut this with plenty of foliage and buds, large branches looking grand in conjunction with sprays of well coloured Virginian Creeper, whether in vases or laid on a dining table. Henry Patrick is also very attractive, the colour being a rich yellow. It is of medium height, free flowering, the blooms being borne on long footstalks. This is one of my favourites.

Empress of India will become as popular as any of the foregoing. It produces extra fine, well formed flowers of a very dark crimson colour. Juarez is known to all lovers of border flowers, this being the true Cactus Dahlia, and distinct in form from any of the preceding. Other colours in this type are now to be had, and these will, I trust, be grown by me next season. Glare of the Garden we find more free flowering than any of those already named, the blooms also being much smaller, in colour a rich scarlet. It is of comparatively dwarf habit, and one of the best to cut from. Crimson Glare of the Garden is of similar habit, but the colour is darker, and an improvement on this will be found in Cochineal. The last named is exceptionally showy and fine for massing. We frequently cut large branches for vases, and it is most effective. Lady Dyke proves to be more of a semi-double than any I have named; it is distinct, of medium height, and free flowering, the blooms being borne on long footstalks, and therefore excellent for cutting. The florets are white, edged with scarlet.—W. I.

HARDY FRUIT SHOW.

CRYSTAL PALACE.—OCTOBER 10TH, 11TH, AND 12TH.

A SEASON so variable as the present, and so unfavourable in some districts to Apples and Pears, might be expected to result in an unsatisfactory Exhibition; but so far from this being the case, the Show held on Thursday, Friday, and Saturday last will compare very favourably with any held in previous years. In numbers and quality the Apples especially were all that could be desired, and in the first of the open classes alone about 700 dishes were staged, constituting an array of bright and diversely coloured specimens such as are rarely seen in competition. As regards exceptional size and merit the Barham Court Apples were, however, supreme, and we do not remember having seen a finer collection of two dozen varieties than that which obtained leading honours in the amateurs' division. Pears were good, those from the garden named above being again much the best, but these classes are never so attractive, from an exhibition point of view, as the Apples. It has frequently been remarked that it would be much more satisfactory if separate classes were provided for orchard house fruits, as when these are shown in collections of fruit grown outdoors or in competition with them the comparison is unfair and misleading. This was still more noticeable at the Show under review, and it is quite likely that an alteration will be made another season.

Vegetables constituted an important portion of the Exhibition, the samples staged being in nearly every case remarkable for their freshness and good culture. Miscellaneous non-competing exhibits were numerous and interesting as usual, adding considerably to the attractions of the

Show. A large proportion of the space in the north nave was occupied with the various products staged, and Mr. W. G. Head arranged them effectively on tables, with groups of Chrysanthemums, Palms, Ferns, &c., between.

In the afternoon of the first day the British Fruit Growers' Association held a meeting and conference, particulars of which appear on page 327.

The chief class for Apples was that (open to all exhibitors) in which prizes were offered for the best exhibition Apples, kitchen and dessert varieties, six fruits of each variety. There were eight competitors, and after a careful consideration of the respective merits of the exhibits, which approached very closely in value, the premier honours were accorded to Messrs. Bunyard & Co., Maidstone, Kent, who had about ninety dishes of admirable fruits, many of great size and beautifully coloured. The most notable were Worcester Pearmain, Grenadier, Calville Rouge Précoce, Yorkshire Greening, Blenheim Pippin, Dutch Mignonne, Alfriston, New Hawthornden, Queen Caroline, Lord Derby, Peasgood's Nonesuch, Warner's King, Wealthy, Mabbott's Pearmain, Stone's Apple, Emperor Alexander, Bismarck, Washington, Gloria Mundi, Cox's Orange Pippin, Fearn's Pippin, Stirling Castle, Golden Noble, Pott's Seedling, Beauty of Kent, Cox's Pomona, Colonel Vaughan, Evargil, Mère de Ménage, Ecklinville, Calville Rouge, Royal Russet, Gipsy King, and King of the Pippins. Mr. C. G. Selater, Devon Nurseries, Heavitree Bridge, near Exeter, was second with a creditable display of fine Apples, the most conspicuous being Beauty of Hants, Mère de Ménage, Peasgood's Nonesuch, Tibbett's Pearmain, Cox's Pomona, Lady Hennifer, Annie Elizabeth, Bull's Golden Reinette, Tom Putt, Blenheim Pippin, Fair Maid of Devon, and Norfolk Beefing. The English Fruit and Rose Company (Cranston's), Limited, King's Acre, Hereford, secured the third prize; and Mr. H. Berwick, Sidmouth Nurseries, Sidmouth, Devon, was awarded the fourth prize.

For the best collection of Pears and fruits of each variety Messrs. T. Rivers & Son won first honours with seventy-five dishes, but not quite so many varieties as in the case of larger fruits, two dishes were required to hold them. Some of the best fruits were Pitmaston Duchess, Souvenir du Congrès, Doyenné du Comice, Gratioli, Marie Louise, Duchesse d'Angoulême, Beurré Alexander, Beurré Rance, Emile d'Heyst, Beurré Diel, Nouvelle Fulvie, Alexandre Lambre, Vicar of Winkfield, Gansel's Bergamot, Madame Treyve, Seedling Bergamot (Rivers), Triumphe de Jodoigne, Durondeau, Bishop's Thumb, Beurré Easter, Beurré Langelier, Catillac, Marie Benoist, Beurré Hardy, Uvedale's St. Germain, Fertility (Rivers), Princess (Rivers), and Magnate (Rivers). All were clean, fine samples, and well worthy of the position accorded them. Mr. J. Butler, gardener to A. J. Thomas, Esq., Orchard Lane Gardens, Sittingbourne, was placed second with eighty dishes, including capital fruits of Beurré Diel, Louise Bonne of Jersey, Columbia, Beurré Clairgeau, General Todleben, Duchesse d'Angoulême, Pitmaston Duchess, Durondeau, Nouveau Poiteau, Doyenné Boussoch, Maréchal de Cour, Doyenné du Comice, Prevost, Fertility, Dunmore, and Beurré Hardy. The third position was accorded to Messrs. G. Bunyard & Co., Maidstone, who had about sixty dishes of wonderfully fine examples of Grosse Calchasse, Beurré Diel, Pitmaston Duchess, General Todleben, Uvedale's St. Germain, Vicar of Winkfield, Duchesse d'Angoulême, Durondeau, Beurré Clairgeau, and Doyenné Boussoch. Messrs. J. Cheal & Sons, Crawley, were fourth.

The class for twenty-four dishes of Apples, kitchen and dessert, six fruits of each, was not a large one, as two collections only were staged, Mr. Woodward, gardener to R. Leigh, Esq., Barham Court, Maidstone, winning first honours with extremely fine specimens of unusual size, clean, and handsome. The varieties were Alfriston, The Queen, Belle Duhois, of great size; Stone's Apple, wonderfully fine; Lord Derby, large; Mère de Ménage, large and deeply coloured; Warner's King, fine; Peasgood's Nonesuch, richly coloured; Calville Malingre, Cox's Pomona, exceedingly bright in colour; Tower of Glamis, Beauty of Kent, Washington, Emperor Alexander, Blenheim Pippin, Minehall's Crab, Calville Rouge Précoce, Calville Rouge, Brabant Bellefleur, Melon Apple, American Mother, Golden Noble, Ribston Pippin, and Cox's Orange. The second place was taken by Mr. H. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent, who also had fine fruits, but not quite so many highly coloured samples; excellent were Peasgood's Nonesuch, Washington, Warner's King, Tower of Glamis, Cox's Pomona, and Queen Caroline.

A class was provided for twelve dishes of Pears, six fruits of each, in which there were eight competitors. Mr. G. Woodward winning first honours with very large and well grown fruits of Durondeau, Pitmaston Duchess, General Todleben, Duchesse d'Angoulême, Doyenné du Comice, Beurré Diel, Beurré Hardy, Maréchal de Cour, Durondeau, Broekworth Park, Fondante de Panseil, Beurré Superfin, and Brown Beurré. Mr. W. Chisholm, gardener to Sir Francis Geary, Bart., Oxon Heath Park, Tunbridge, was second, showing Pitmaston Duchess very fine; also Durondeau and Gansel's Bergamot, with Vicar of Winkfield. Mr. W. A. Cook, The Gardens, Compton Bassett, Calne, Wilts, was third, having remarkable fruits of Duchesse d'Angoulême and Catillac.

With twelve dishes of Apples there were seven competitors, Mr. Sidney H. Goodwin, Mereworth, Kent, taking the lead with Peasgood's Nonesuch, Stone's Apple, Nelson's Glory, Yorkshire Beauty, Cellini, Kentish Fillbasket, New Hawthornden, Cox's Pomona, Searlet Pearmain, Hoary Morning, Worcester Pearmain, Cox's Orange Pippin. Mr. Wm. Parker, gardener to Mrs. Evans, Moreton Court, Hereford, was a close second, his best specimens being Yorkshire Beauty, Blenheim Pippin, Warner's King, Tyler's Kernel, and Court Pendu Plat. Mr. A. Killick, Weavering, Maidstone, was third also with good fruits.

Messrs. Paul & Son, Cheshunt, exhibited a group of hardy flowers—Gladioli, Asters, Senecio pulcher, very beautiful; Rosa lucida, with reddish bronze foliage and scarlet fruits; Tritomas, Phloxes, and Pyrethrum uliginosum. Messrs. H. Cannell & Sons, Swanley, exhibited a group of Taberous Begonias in many fine varieties, also a collection of Gourds.

Messrs. J. Laing & Sons, Forest Hill, had an imposing group of Tuberosus Begonias, arranged on a table in quadrangular form, surrounded by Palms. The brilliant flowers were seen to excellent advantage, but the group was a little too formal.

Gourds were rather extensively shown, Mr. C. Osman, Sutton, being the principal exhibitor of collections. Messrs. H. Cannell, G. Sturgess, and W. Mist also showing. Messrs. G. Sheppard, Pulborough, J. Rodbourne, and G. Sturgess were the prizetakers for the heaviest Pumpkin.

The vegetables were wonderfully good, and it is seldom that so many well arranged collections of excellent produce are seen together. The Crystal Palace authorities provided two classes, one for twelve dishes of vegetables, not more than two dishes of any variety, in which the prize-winners were Messrs. J. Lambert, Onslow Hall Gardens, Shrewsbury; A. Waterman, Preston Hall Gardens, Aylesford; R. Lye, Sydmonton Court, Newbury; and W. Pope, Highchere Castle, Newbury. The other was for six dishes of vegetables (cottage only), the prizes going to Messrs. H. Gibbs, Church Green, Ightham, Sevenoaks; N. Goring, Three Bridges, Worth, Sussex; and W. Thayer, Crawley, Sussex.

Special prizes were also numerous for vegetables. Messrs. J. Carter and Co., Holborn, offered three prizes for the best six dishes of vegetables, to include a dish of one of Messrs. Carters' new varieties of Tomatoes (nine fruits). The winners were Messrs. C. J. Waite, Glenhurst, Esher; R. Lye, and J. Lambert. Messrs. Sutton & Sons, Reading, offered five prizes for the best collection of vegetables, six distinct varieties, including six specimens of Onion, "Sutton's Improved Reading" and six specimens of Carrot, "Sutton's New Red Intermediate." The successful competitors were Messrs. T. A. Beckett, Amersham; C. J. Waite, W. Pope, R. Lye, and A. Waterman. The first prize collection in this class was exceedingly tastefully arranged, and several photographs of it were taken during the Show. Messrs. J. Cheal and Sons, Crawley, also offered three prizes for a collection of six varieties of vegetables, the first prize being awarded to Mr. N. Goring, Three Bridges, Worth, Sussex. The Standard Manufacturing Company also offered several prizes, which were awarded to Mr. E. Sturgess, gardener to R. B. Fearon, Esq., Banstead, and Messrs. G. Bunyard & Co., Maidstone. A first-class certificate was awarded to Messrs. Hawkins and Bennett for the early flowering Chrysanthemum Mrs. Hawkins, a golden sport from G. Wermig, which had been previously certificated by the Royal Horticultural Society and National Chrysanthemum Society.

Miscellaneous.—Messrs. J. Veitch & Sons, Chelsea, showed ninety dishes of Pears and nearly 200 dishes of Apples, all clean well grown specimens. Messrs. T. Rivers & Son, Sawbridgeworth, exhibited a number of fruit trees in pots, chiefly Apples and Pears, with one Cherry named Guigne de Winkler, very late, and of fair quality. One variety of Apple named Bijou was extremely beautiful, a small specimen 4 or 5 feet high, and having about forty fruits of a rich red colour. Mr. J. Butler, Orchard Lane Gardens, Sittingbourne, showed some fine Pears. Messrs. Peed & Son had a collection of Apples and Pears. Messrs. J. Cheal & Sons, Crawley, had a collection of Apples and Pears, amongst the former capital fruits of the Forge Apple, King of the Pippins, the Nanny Apple, and Yorkshire Beauty.

NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.

The usual monthly meeting of the Notts Horticultural and Botanical Society was held at the Nottingham Arboretum Rooms on Wednesday last, October 9th. The display of fruit and Potatoes was the best the members of the Society have yet made, and the attendance was very large. Amongst the principal exhibitors were Mr. H. Fletcher of Annesley, Notts, who had over forty varieties of Potatoes in splendid condition, several of which are seedlings of great promise, and are now the subject of experiment by the Royal Horticultural Society. A local variety called Basford Beauty was remarkably fine, as also were Lord Tennyson and Beauty of Hebron. The Society awarded their first class certificate to this collection. Mr. H. Merryweather of Southwell staged excellent specimens of his well known Apple Bramley's Seedling, large, solid, splendidly coloured fruits averaging from 10 to 12 ozs. each. So good were they in every respect that the Society's certificate of merit was awarded for them. This Apple is being largely grown in this neighbourhood, and the reports of its cropping and keeping qualities are of a favourable character. Dr. Powell of the Coppice Asylum, Nottingham, sent through his gardener, Mr. Brown, a large and varied collection of vegetables and fruit, numbering about fifty varieties. His Potatoes, Brussels Sprouts (Northaw Giant), Peas, Celery, Carrots, French Beans, Cauliflowers, and Turnips were wonderfully well grown and much commented upon by the members. So excellent was this collection that the Society awarded its certificate, which it well deserved.

The President of the Society, W. H. Farmer, Esq. (gardener, Mr. Attenborough), sent fifty varieties of Apples and Pears, including most of the popular varieties; but by far the finest examples of Apples and Pears came from Clifton Hall Gardens (gardener, Mr. Anderson), Pitmaston Duchess Pears turning the scale at 1 lb. 5 ozs. each, a splendid sample; Beurré Diel and Marie Louise were likewise excellent in quality. Amongst his Apples was a seedling variety of excellent

promise, possessing an agreeable flavour, and said to be an excellent keeper; in appearance it bears some resemblance to Cellini, but in flavour it far surpasses that variety; it is alike excellent for culinary table purposes. Blenheim Pippin, Worcester Pearmain, and Spencer's Favourite were amongst his other best dishes.

J. Wesley Lewis, Esq., Hardwick House, Nottingham, sent thirty varieties of Apples and Pears, Warner's King, Maltster, and Cellini Pippin being amongst his best Apples. C. J. Cox, Esq., Basford, Notts, also staged a good collection of Apples and Pears; also some nice pans of Pleione, intermixed with small Ferns. Mr. Baker of Basford had a variety of cut Cineraria flowers, and a fine sample of Marie Louise Pear; whilst Mr. J. B. Hallam, an artisan grower, set up a quantity of Chrysanthemum blooms, which showed every indication of careful culture. James Booth, Esq. (gardener, Mr. Ralph), exhibited table plants and a collection of fruit. After a careful inspection of the many meritorious exhibits a discussion upon the fruit crops was introduced by Mr. N. H. Pownall, and was taken part in by members. Many of the exhibits remained on view the following day.—J. H. WALKER.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—The trees are at rest, and promise well. The buds are not too large—a good sign, and through the lights being removed some time, the borders have been thoroughly moistened; therefore there is no fear of the buds falling. The trees should be pruned, dressed with an insecticide, and the whole house cleansed. The trees might be tied to the trellis, everything forwarded so that a start can be made without delay when the proper time arrives. The lights must remain off until the time of closing the house; or if the lights are fixed, which is a great mistake, the inside border must not lack moisture, and air must be admitted to the fullest possible extent.

Second Early House.—The trees are casting their foliage, and the roof lights should be removed. The exposure of the trees has an invigorating tendency; it insures perfect rest, and the rains do much to free them from insects, besides thoroughly watering the inside borders down to the drainage. When the foliage is all down give the necessary pruning, dressing with an insecticide, and cleansing the house may be proceeded with, removing the surface soil down to the roots, and supplying fresh material, but not covering the roots deeper than 3 or 4 inches. In the case of fixed roof lights watering may be necessary; under no circumstances must the trees be allowed to become dry at the roots.

Midseason Houses.—The trees in these are in the proper condition for lifting. It must be done with dispatch, all the materials being in readiness. Provide efficient drainage, shortening any strong roots, and bringing any that are deep nearer the surface, employing the compost moderately firm. Good loam rather strong, with an admixture of a sixth of old mortar rubbish, and a sprinkling of crushed bones and a similar proportion of charcoal, will grow Peaches and Nectarines perfectly. If the soil be light, add a fourth of clay marl, and if very strong, a similar quantity of road scrapings. Avoid manure, except at the surface. Give a good watering, and the trees will soon be established in the fresh compost. If trees are judiciously treated at the roots whilst they have foliage, the fruit seldom fails to set and stone satisfactorily. Borders that have the surface a soapy mass and it is not possible to remove it, may have a good dressing of quicklime quite an inch thick, mixing it with the surface soil as deeply as the roots allow without much disturbance.

Latest Houses.—Good late Peaches are very valuable. The best with us is Sea Eagle, a large showy fruit, well flavoured, with a juicy melting flesh. It is one of the best late sorts, devoid of the stringiness and mealiness too prevalent in some late Peaches. As the wood is not too ripe the house is almost closed by day so as to insure a good heat, there being, of course, enough ventilation to insure a circulation. Any trees that have too gross wood should have a trench taken out as deep as the roots, and about one-third the distance from the stem the trees cover of trellis, and left open for a fortnight, then filled in again firmly.

CUCUMBERS.—Place out the latest plants which are to afford a supply of fruit about the new year on ridges or hillocks, training with a single stem to the trellis, up which they may be allowed to advance about two-thirds, when the lead may be pinched. Those not having the convenience of a Cucumber house may secure fair supplies of winter fruit by growing the plants in pots or boxes, training the growths near the glass over the pathways in stoves, fruiting Pine houses, or other heated structures. Plants in bearing should not be overcropped or the fruit allowed to remain longer than it is fit to cut, removing all deformed fruit in a young state. Maintain a night temperature of 70°, 5° less in the morning, 75° by day, up to 85° with sun heat, admitting a little air at the top of the house at every favourable opportunity. The evaporation troughs should be charged with liquid manure, and the floors damped about 8 A.M. and 4 P.M., dispensing with the syringe.

Reduce the supply of water at the roots, but not so much as to cause flagging. A few horse droppings sprinkled on the beds occasionally will benefit the plants through the waterings and the ammonia given off. Keep the foliage thin and the glass clean to secure thorough solidified growth.

MELONS.—In houses the supply of fairly well flavoured fruit will be kept up for some time longer, the latest fruits being only swelling. Sufficient moisture will be secured to this crop by damping in the morning and again early in the afternoon, affording water to the roots moderately; a supply once a week will be sufficient. All superfluous laterals must be cut out so as to afford the principal foliage the benefit of the autumn sun. Plants with fruits approaching ripeness must be kept dry and a brisk heat maintained with rather free ventilation, the temperature being kept at 65° at night, 70° to 75° by day, rising to 85° or 90° from sun heat, affording a little air at the upper part of the roof whenever the weather is favourable.

One of the best Melons for late work is Scarlet Premier, the fruit keeping a considerable time after cutting. Any fruits approaching ripeness should be cut with a good portion of stem, and placed in a house with a gentle warmth, where they will ripen and be welcome additions to the dessert.

KITCHEN GARDEN.

THE POTATO DISEASE.—At one time in July and August we thought the present was going to be an exceptionally good Potato year, but it has proved otherwise, as the disease made rapid progress in September, and many of the late crops are badly affected. Some of those which were stored in apparently good condition have since become diseased. All such should be examined and every decaying tuber removed. Late crops which it is intended to store in clamps under straw and soil should be kept in a cool airy shed for a week or two before being put away, as if once under the soil they cannot be readily examined; and to enclose diseased tubers, however little they may be affected at the time, may soon end in the destruction of the bulk of the crop.

PROTECTING MATERIALS.—Winter is fast approaching, and protecting materials should be in readiness. Old mats, straw, and bracken are useful for sheltering young Cauliflower plants, Lettuce, Endive, Celery, &c. The bracken is especially useful. It should be cut before it is too much withered, and it should be stored before it has become very dry to prevent it crumbling away prematurely. Where Carrots, Beet, &c., cannot be lifted and stored, a covering of bracken put over their tops in frosty weather will give a great amount of protection. Potatoes that are difficult to be all accommodated in the dark may be kept from becoming green by placing a layer of bracken over them. It does not lie so close as straw or hay, and the air can circulate through it as long as it is kept dry.

TOMATOES.—Open air fruits have ripened well during the last six weeks or more. The cold nights, however, are now impeding their swelling, and unless they can be protected with glass lights it will be best to cut the fruit off and hang it in a warm room to mature. If touched by frost before being cut they will decay. Plants under glass that are still carrying some fruit and a great deal of foliage should be relieved of much of the latter, as the fruit will both swell and colour better. We have some plants on a shelf in a lean-to Pine house that are bearing more fruit than leaves, and the fine clusters attract the attention of all who see them. We make sure of retaining a good variety by cutting in the autumn, and keeping these on in small pots as stock plants for spring. Inserted in sandy soil and kept in a close atmosphere the cuttings root in a fortnight. In saving seed of Tomatoes only the best fruits should be chosen.

MULCHING ASPARAGUS ROOTS.—Where Asparagus roots have failed to make satisfactory progress during the summer they may be improved to a considerable extent by placing some half-decayed manure round the stems at once. This will be found particularly beneficial in light soils, and Asparagus should never be planted in heavy material. The roots are very thick and fleshy, and absorb food in winter. Roots intended for early forcing will be much benefited by this treatment.

BRUSSELS SPROUTS.—These have grown and buttoned very freely this season. They are more forward than usual, and as the sprouts are ready some may be tempted to use them, while other vegetables are spoiling. It would be much better to reserve the sprouts until nearer midwinter, as, although they are ready for use now, they will not deteriorate if allowed to remain on the stems for three or four months at least.

EARLY SAVOYS.—We have cautioned readers against having these too early. We recently saw about quarter of an acre raised in April now all burst and useless. Our own, that were sown and planted much later, are in prime condition.



NOTES ON BEES.

FEEDING BEES.

THERE are two extremes in this—namely, slow and rapid feeding. The former worries out the bees, wastes sugar, and serves no good purpose whatever. The latter is apt to engender foul

brood, and sometimes the combs collapse through the excessive heat raised by the bees. From 2 to 4 lbs. of sugar daily is quite sufficient for any hive, and by this method safety is ensured. Of course where under feeders are used, feeding should only be done between sunset and sunrise.

FOUL BROOD.

In three different apiaries this season foul brood has appeared, and in all the three, on inquiry being made, old honey had been used as food, in combination with sugar during the spring and early summer. Sugar alone is the best and safest food to give bees at all times.

JOINING BEE^s.

This is a practice still followed by many bee-keepers, but one which I have for many years abandoned at this season, seldom seeing or experiencing any benefit from it, my nuclei often proving the most profitable stocks the following summer. There are various ways of uniting two colonies. Some make a very bungling job of it, often getting more than half of the bees killed, and not unfrequently both queens. A safe way of uniting two colonies is to drive both lots and cage the queen to be kept on the combs, and while the bees are gorged with sugar or honey shake both together, or set that having the queen over the others and let them gradually creep together. A little essence of peppermint in the syrup the bees are sprinkled with is an advantage, or if a few hours previous to joining a bit of camphor is placed on the floor of each hive, and both lots of bees are fed, there will be no fighting, especially if a frame of bees and comb from each hive is placed alternately in the permanent hive. Bees so mixed seldom fight. Where surplus hives are at command, immediately before the great honey flow is the best and proper time to unite bees, not at any time after.

AGE OF BEES.

At the present time I observe bees in my apiary that were hatched not later than in May. I doubt not but many of the bees living now will be alive in May, 1890.

MODES OF PREPARING BEES FOR HEATHER.

To those who are within reach of Heather it is absolutely necessary if profit is expected to have strong stocks. The stocks we have been most successful with have always been unswarmed ones, having a young queen introduced about a month previous to the Heather being ready; but as the swarming system requires less capital to work during bad seasons or winter it is not to be despised, because when they are so managed to swarm early it gives three stocks instead of one during the ingathering of honey, and by the time the Heather is in order all are equal to any non-swarmers, and if the work of uniting takes place at the proper time are far superior. The surest thing to prevent swarming at this season after a young queen is to deprive the bees at the first opportunity of some of their honey—supers if possible.

Some years since I described a system of driving the bees into empty hives before taking them to the moors, and acting as the year was favourable or unfavourable with bees and deserted hives, the chief aim being to renew the combs annually, and at the same time to secure the largest amount of pure white Heather comb, so much desired by lovers of honey—a quality of honeycomb many know little or nothing about, unobtainable from hives where the bees have access to the supers right over the brood nest.

Others, again, after the bees have been driven from their combs and stores about three weeks after the issue of the first swarm, break up all the comb, giving the bees an empty hive, attention being paid to prevent death only should unfavourable weather occur. I have known hives so dealt with in a good season rise in weight 70 lbs. during the month of August. Others, again, take all their stocks, first and second swarms and old stock, to the Heather, and at the end preserve the second swarm with the bees of the old stock and first swarm added. This system has sometimes proved remunerative, but taking one year with another I am inclined to think that uniting the first swarm bees to the queen of the old

stock before the Heather season more honey would have been gathered; but it brings us back to the old question, How can the bees be best disposed of without the aid of brimstone? A series of years, such as 1888-89 has been, leaves no room for destroying bees, but the reverse; but should seasons turn out as we wish I am inclined to think that many bees will have to be subjected to the brimstone pit we are all so anxious to avoid. The best way to accomplish it is on the non-swarmling and uniting in July system.

HOME APIARY.

Nearly all my hives are prepared for the winter, well protected from wet, the entrances reduced to not more than three-quarters of an inch wide. This keeps away all draught, and the ventilating floor prevents evil consequences. The fine weather we are now enjoying is giving the bees ample opportunities for exercise, preparing and fitting them to withstand an Arctic winter should it appear. Everywhere hives are in better condition for wintering than they were in the autumn of 1888, and this state of matters is more promising for a good harvest in 1890 than we could expect in 1889.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Wm. Paul & Son, Waltham Cross.—*Catalogue of Roses, 1889-1890.*
Charles Turner, Slough.—*Catalogue of Roses, Fruit Trees, and Nursery Stock.*
S. P. Dixon & Sons, Hull.—*Catalogue of Roses.*
Jefferies & Son, Cirencester.—*Catalogues of Trees and Roses.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Large Sales (W. F.).—What you send for publication is purely an advertisement, and a very striking one. The publisher will send you the terms for insertion if you desire to have them.

Exhibiting Orchard House Fruit (W. J. and S. T.).—You will find the purport of your letters embodied in the first article in the present issue of the Journal, and we think it is not unlikely a change will be made of the nature suggested.

Malva Seed (C. Guernsey).—We do not remember that anything of the kind you mention has appeared in our columns, though we may have overlooked it. If you can quote the page on which the difficulty to procure seed of the varieties you name appears, and send your full name and address, the matter shall have due consideration.

Fruit Trees for North Wall (A. W. S.).—The American Bramble, if it grew well, would cover a wall twice the height of yours, and we are not certain that the fruit would ripen well without sun in your district. Red Currants or Morello Cherries would be more likely to give satisfaction, both bearing and ripening well on north aspects in South Yorkshire.

Sulphur to Vine Roots (W. Palmer).—We are obliged by your note. We discovered the misprint too late for rectification. The word "roots" in the sixth line from the bottom of the article on p. 306-7 last week should have been "pipes." Most gardeners, however, know that sulphur is not applied to the roots of Vines, but on the pipes in wineries as an antidote to red spider on the leaves.

Vegetation on Garden Walks (F. J., Devon).—What you enclosed in a box arrived in a jelly-like mass. The weed appears to be a Conferva of some kind, and probably the walks are sodden with wet, drains being needed for carrying off superfluous water. However, we have never known any vegetation that did not succumb to the "weed killers" that are advertised. They will, we suspect, kill everything that grows if applied strong enough, and they are not expensive.

Liquid Manure (A. Youngster).—We are sorry to say your short communication on this subject will not, as you say, "pass muster." You by no means make clear what you intend to convey, the sentences being so involved. Only one is plain—namely, that in which you say "unhealthy plants have been improved by liquid manure," and cite as examples some pots of Lachenalias. This is all we can extract from what we are compelled to describe as your carelessly written article.

Transplanting Roses (Engineer).—We have no doubt your Roses can be successfully removed, and the sooner the work is done the better after most of the leaves can be shaken or rubbed off the stems; indeed, we should not hesitate to cut them off and transplant at once; if left on after removal they conduct the moisture from the stems by evaporation. Do not permit the roots to become dry in transit, trim off any broken ends, place light gritty soil in contact with them, then fill in with the ordinary soil, pressing it down, and cover the surface with manure. Any strong growth may be shortened to a foot or so in length, pruning closely towards the end of March or early in April according to the weather. They ought to grow well in such soil as you describe.

Planting Rhododendrons (E. W.).—There is no better time than the autumn for planting these shrubs, but they will answer when planted under favourable conditions of soil and weather any time during the next five months. They are the most accommodating of shrubs to remove, and if due care be exercised in the work not one out of five hundred of healthy, well rooted examples will fail to grow. A mixture of turfy loam that contains little or no lime, leaf soil, and turfy peat in equal parts, will answer your purpose, pressing it down firmly. In some districts these shrubs grow well in loam without any admixture, and much better than in some kinds of peat. They do not answer where the soil is shallow on a hard, dry subsoil; nor do they succeed in any soil where the ground is deeply dug amongst them annually. It should be merely scratched over, and top-dressings of decayed vegetable matter never fail to have a beneficial effect.

Culture of Dipladenia amabilis (T. H.).—The plant will not require cutting down now. Keep it growing slowly until spring, when it can be placed in a brisk stove temperature, syringing frequently, and maintaining a humid atmosphere, but be careful not to give too much water to the roots, as Dipladenias are easily damaged in this respect. Just keep the soil moist, but never waterlogged or stagnant. Next autumn the growths may be cut back to within 5 or 6 feet of the pot and treated similarly in other respects. The shoots must be trained to a trellis for exhibition, but when growing they can be trained to strings taken from the pot to the roof of the house. Give the plant a light position, and do not allow much root space. A 24-size pot will be sufficient for a good specimen, and you will probably only need a smaller one at present.

Culture of Antholyza (Idem).—The Antholyzas generally require a cool house, but in some positions they will succeed out of doors. They are best grown in pots of light sandy soil. Give plenty of water if growth is now advancing, but do not have the plants in too warm a place or they will become weak. An ordinary greenhouse suits them well enough. You can use the lime for the plants named, but it would not be safe for Heaths and hardwooded plants generally.

Autumn Pears (Mum).—We presume from your remark that you do not wish for late varieties that remain long on the trees, but sorts that can be gathered when nearly ripe and soon afterwards ready for use. The following half-dozen combine good size with quality, and afford a supply of fruit over three or four months:—Williams' Bon Chrétien, Beurré Superfin, Marie Louise, Louise Bonne of Jersey, Pitmaston Duchess, and Doyenné du Comice. The last but one is not a Pear of the first quality, but is included because of its large size and handsome appearance combined with fair quality. If you prefer a smaller Pear of richer flavour plant Fondante d'Automne. We should plant single cordons about 20 inches apart, having as many of a sort as the length of the wall permits. Train them upright or nearly so the first year, not taking off the tops except any that may terminate with a blossom bud, but cut back any side shoots to within an inch of their base. When the trees are growing freely and nearly reach the top of the wall, they can be depressed and secured at an angle of 60° for the season, then brought down to 45°, gaining a length of 3 feet of stem over keeping them upright. The trees are cheap, easy to manage, and cover in the quickest time.

Chrysanthemums Damping (F. J.).—It is very difficult to point out the cause of your blooms damping without seeing them and knowing exactly how they have been treated in every respect. If the plants are active at their roots, we are inclined to think they may have been left outside too long, and have been slightly checked. Damping is also due to a superabundance of moisture in the atmosphere and defective ventilation. During changeable weather the utmost care is necessary to maintain a uniform condition of moisture in the atmosphere. When the sun bursts out brightly, and ample ventilation is not quickly provided, the moisture of the atmosphere is condensed on the florets, and quickly ends in their destruction. The varieties you name are very liable to damp, especially in a house where a little fire heat may be used and the atmosphere close and rather moist. They always open best when housed before the flower buds are too far advanced, and where they can have liberal ventilation. Any attempt at hurrying them frequently ends in damping. With the best of men scores of fine blooms are often lost after a fog. It is possible that a few early buds on some of your plants may have been taken, and this will account for other

plants running up so much taller on the same plant. Sometimes insects destroy the bud, and the shoot has to be allowed to extend again to form another bud. Sometimes they miss showing a bud that would develop into a good bloom. It is not uncommon to see buds on plants such as you describe in different stages of growth and height.

Gladiolus and Daffodils (*T. W.*).—Boxes 5 inches deep will do very well for Gladiolus The Bride, but we should prefer to place them in 5 or 7-inch pots. Arrange them in the greenhouse or any other cool structure where they can be covered with cocoa-nut fibre refuse or ashes until abundance of roots are formed and growth has commenced. When in this stage remove them to a temperature of 50° to 55°, where they can be kept near to the glass and a little ventilation can be given daily. Directly the flower spikes are visible a temperature of 60° may be provided. They will bear a higher temperature from the time the flowers show signs of rapid development, but they do not possess the substance they have when brought forward in a lower temperature. By this time the Daffodils and Narcissus should have rooted abundantly and be ready for removing from the material in which they have been plunged. It is important to pot these bulbs early when the flowers are needed in good time. Plants that are ready for removal from the plunging material now, and are gradually exposed to light in a frame and are allowed to remain for a fortnight after they are green in a temperature of 50°, increasing it gradually, will soon commence rapid growth. The temperature may be gradually increased 5°, and to 60° in their last stages of growth. Daffodils should not be hurried until the flower is visible. These bulbs do not bear hard forcing well, and if they are to unfold their flowers and give satisfaction, they should have a moderately lengthened season of growth. Starting them early, and bringing them on gently until the last two or three weeks, is the secret of success. If you grow them well the first year they force better and can be had earlier the second.

Black Hamburgh Grapes not Colouring (*W. B.*).—When the crop is good and advances satisfactorily to the ripening stage, then refuses to colour, it is certain something is wrong. Either the roots fail to transmit the necessary amount and proper description of nutriment, or the elaborating functions of the leaves are defective. The rooting medium contains only so much plant food—it is liberated and assimilated as such by atmospheric action, and in proportion thereto rests its value. Roots in the subsoil transmit poor watery sap, the leaves in the early stages having less elaborating power are formed large and thin in texture, and the wood is correspondingly long-jointed. Want of colour and shanking are due to poverty—insufficient and improper food, either by injudicious manipulations or non-essential supplies. In your case, as the border is small, and more roots probably outside than in it, we should not lift the Vines, but pursue the course you have entered on as most likely to lead to success—viz., encouraging fresh growth, increasing the power of elaboration, thereby securing more assimilated matter or stored food. Let the Vines start naturally, then afford a gentle warmth in the pipes, so as to admit under favourable external conditions of a free circulation of air, and train the growths thinly, so that each of the principal leaves will when fully developed have full exposure to light, and not allow more lateral growth than there is space for without interfering with the main foliage. Encourage extension, train up fresh canes wherever there is room—in brief, get more foliage, even if older canes or rods have to be cut away, yet never allow crowding. With this you will secure stronger textured leaves, which will not evaporate nearly so much under powerful sun, and will not be so liable to fluctuation in its assimilating functions as the thin and flabby, therefore more calculated to bear unprejudiced the vicissitudes of climatic and cultural strain. Crop lightly, and restrain superfluous growth early and persistently. Remove some of the soil and add fresh, so as to bring the roots nearer the surface, and mulch it with some enriching material now, leaving enough to cover the surface lightly. Give a thorough soaking with liquid manure in a tepid state a little before the Grapes colour, and cast the bedding plants away.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. P.*).—1, Greenup's Pippin; 2, Golden Winter Pearmain; 3, Rymer. (*H. F.*).—2, Minchall Crab; 3, Blenheim Pippin; 4, Fearn's Pippin; 5, Lemon Pippin; 6, Norfolk Beefing. (*Saxon*).—2, Dumelow's Seedling, highly coloured; 3, Cellini; 4, Golden Winter Pearmain. (*J. Witherspoon*).—1, Trumpington; 2, Melrose; 3, Lemon Pippin. (*James Harris*).—1, Nouveau Poiteau; 2, Catillac; 3, Winter Nelis; 4, Doyenné Boussoch. (*H. Wright*).—Lane's Prince Albert. (*J. G.*).—The small Pear is Brougham; the large one is one of Van Mons' seedlings, named Amande Double. (*J. Cooper*).—1 and 2, Golden Winter Pearmain; 3, Calville Rouge d'Automne; 4, Alfriston; 5, Petworth Nonpareil. (*W. Crowder & Sons*).—Bramley's Seedling.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. B.*).—1, *Osmunda cinnamomea*; 2, *Adiantum cultratum*; 3, *Adiantum concinnum latum*; 4, *Microlepia hirta-cristata*; 5, *Adiantum his-*

pidulum; 6, *Adiantum macrophyllum*. (*G. W.*).—1, *Calamintha clinopodium*; 2, *Helianthus decapetalus*; 3, *Aster Amellus*. (*H. P.*).—1, Too withered; 2, *Sedum Sieboldi variegata*; 3, *Ophiopogon jaburan variegatum*; 4, *Begonia semperflorens* variety. (*Cambrian*).—1, Insufficient; 2, *Sedum*, insufficient for identification; 4, *Asplenium bulbiferum*; 5, *Sedum album*; 6, *Phytolacca decandra*; No. 3 not included. (*R. H.*).—*Polypodium pectinatum*.

COVENT GARDEN MARKET.—OCTOBER 16TH.

Prices unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2	0 to 4	Oranges, per 100	4	0 to 9
„ Nova Scotia and	0	0	Peaches, dozen	2	0
„ Canada, per barrel	0	0	Plums, ½-sieve	3	0
Observed, ½ sieve	0	0	Red Currants, per ½-sieve	0	0
Grapes, per lb.	0	6	Black „	0	0
Lemons, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Mushrooms, punnet	1	6
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bushel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches	2	0
Brussels Sprouts, ½ sieve	1	6	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capisiums, per 100	0	0	„ Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Garlic, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	0	Scorzonera, bundle	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	3
Cucumbers, each	0	3	Spinach, bushel	1	0
Endive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Leeks, bunch	0	2			

CUT FLOWERS;

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	3	0 to 6	Lilium longiflorum, 12	3	0 to 6
Asters, per bunch, French	0	0	blooms	3	0 to 6
„ doz. English	4	0	Maidenhair Fern, doz.	4	0
Bouvardias, bunch	0	6	„ bunches	4	0
Camellias, dozen blooms	2	0	Marguerites, 12 bunches	2	0
Carnations, 12 blooms ..	1	0	Mignonne, 12 bunches	2	0
Caryophyllums, dozen	1	0	Myosotis or Forgetmenots	1	6
blooms	1	0	doz. bunches	0	0
Chrysanthemums, dozen	2	0	Pansies, dozen bunches ..	0	0
bunches	2	0	Pelargoniums, 12 trusses	0	6
Clove Carnations, 12 bunches	0	0	„ scarlet, 12 bunches	3	0
Cornflower, doz. bunches	1	0	Pinks (various) 12 bunches	0	0
Dahlias, dozen bunches ..	2	0	Poppies, various, 12 bunches	0	0
Eucharis, dozen	3	0	Roses (indoor), dozen ..	0	6
Caillardia picta, 12 bunches	2	0	„ Mixed, doz. bunches	3	0
Gardenias, 12 blooms ..	3	0	„ Red, dozen bunches	6	0
Gladioli, per bunch	0	6	„ 12 blooms	0	9
Gladiolus brecheleyensis,	1	0	„ Tea, white, dozen ..	1	0
dozen sprays	1	0	„ Yellow	2	0
Helianthus, or Sunflower,	3	0	Spiraea, dozen bunches ..	0	0
dozen bunches	3	0	Stephanotis, doz. sprays	3	0
„ large, dozen blooms	0	0	Sweet Peas, doz. bunches	2	0
Lapageria, 12 blooms ..	1	0	„ Sweet Sultan,	0	0
Lavender, dozen bunches	0	0	„ Rubroscas, 12 blooms ..	0	6
Lilium auratum, 12 blms	0	0	Violets, dozen bunches ..	1	0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralla Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen	3	0 to 9
Arum Lilies, per dozen ..	0	0	Geraniums, Ivy, doz. ..	0	0
Arborvitae (golden) dozen	6	0	Hydrangea, per dozen ..	9	0
Asters, 12 pots	3	0	Lobelia, per dozen	0	0
Begonias, various, per doz.	4	0	Marguerite Daisy, dozen	6	0
Balsams, per dozen	0	0	Mignonne, per dozen ..	0	0
Caladiums, per doz.	0	0	„ Must, per dozen	0	0
Calceolarias, per dozen ..	0	0	Myrtles, dozen	6	0
Christmas Rose	0	0	Nasturtiums, per dozen ..	0	0
Chrysanthemums, dozen	6	0	Palma, in var., each ..	2	6
Cockscombs, per dozen ..	3	0	Pelargoniums, scarlet, 12	2	0
Dracaena terminalis, doz.	24	0	Rhodantha, per dozen ..	0	0
Dracaena viridula, doz. ..	12	0	Roses, (Fr.), per bunch ..	2	0
Erica, various, dozen	12	0	Saxifrage pyramidalis,	0	0
Enonymus, var., dozen ..	6	0	per dozen	0	0
Evergreens, in var., dozen	6	0	Solanums, per dozen ..	6	0
Ferns, in variety, dozen	4	0	Violets (Fr.), per bunch ..	1	6
Ficus elastica, each	1	6	White Lilac (French), per	6	0
Foliage plants, var., each	2	0	bunch	6	0



LANDLORDS' FARMING.

SEED SELECTION.

THE term of economic liberality which we explained in our last article applies to nothing with more force than to expenditure upon farm seed of all kinds. Repeatedly have we shown the folly of using tail corn for seed, and in our own practice we have striven hard to use the best seed to be had for our purpose. Tenant

farmers are wont to discuss landlords' farming in a half pitying, half humorous manner. "Let him try his hand and see if he can make a rent," say they. Well, landlords have tried their hand per force of circumstances, and in many an instance the result has been a heavy loss, but in others there has been success, which is all the more important from the extraordinary difficulties which attend the work of reclaiming most of the land falling upon the landlords' hands. Our readers know the process full well, and we need not repeat an oft-told tale of draining, tillage, and manuring. But we may remind them that when all this outlay has been incurred good seed must be had to render our work complete.

Very tempting are the samples of seed corn to be seen upon the stands of seed merchants at agricultural shows, but they cannot be taken alone as a guide to the purchaser, for they are often hand-picked grain by grain. If he is tempted to give an order he should insist upon taking a sample away with him, and see subsequently that the bulk is equal to sample. Our own plan is to give a trial to all new introductions of fair promise, but to do it with moderation, and so prove in a small way if novelties are really worthy of extensive cultivation. For example we may take Wheat, and we shall find that it is not always the large showy ears that turn out most profitable. We have had better results from White Chaff, Red, and other select varieties of Square-headed Wheat than from Giant Whites and other long-eared sorts. There is, however, no fixed rule, and much must always depend upon individual observation and judgment. The latest introduction among Giant White Wheat is Salvator or Mountain Ash, which has now been on trial for two years, and has proved so satisfactory that it will be grown extensively in East Anglia next season. One cautious farmer who watched the growth of a small field of it this year is so convinced of its excellence that he has ordered enough seed for fifty acres. It should not be forgotten that this new Wheat is really a white variety of Rivett Wheat, and that it will answer well on heavy land. For mixed soil the White Champion is the best white Wheat we have had, but it does not answer so well on heavy land, and will be replaced there by Salvator. Champion is, in our opinion, quite as hardy as Hunter's; it stands up well, and we had hardly any of it beaten down this year. We do not recommend its culture to the exclusion of all other sorts, but with good soil anybody may venture upon sowing it extensively.

The mention of seed selection is a reminder that every home farm should have its trial ground to test both seed and manure. We know nothing more interesting and instructive than this, and it need not be extensive to prove thoroughly useful. Plots only 3 or 4 yards square will suffice, and they should be divided by narrow paths, and be arranged on each side of a tolerably wide central path. The plots are then grouped so that the different sorts of Wheat, Barley, Oats, &c., are sufficiently near together for observation and comparison. Roots, forage (Grasses and Clovers included) should also have sections devoted to them. We have derived so much pleasure and instruction from our own trial ground, that we wonder at not meeting with others more frequently. Certainly a landlord would be doing good service both to himself and his tenants to establish a trial ground at the home farm. It would tend to resolve doubts upon many a question both of crops and cultivation, for depend upon it the results of such trials are of much practical importance, and are really applicable to general practice. This is the best time of year to begin a trial ground, Wheat, winter Beans, Peas, Oats, and Barley being sown at once. Manure trials might also begin at once upon the winter corn plots.

Meanwhile we cannot go far wrong if we use pure seed of really well known sorts, till we obtain such particular knowledge from our own trials as will enable us to put a certain amount of individuality into our cropping. If purchased seed corn contains many small grains as it is so apt to do, it always answers to pass it through a good corn screen once or twice, so as to get rid of all

inferior grain. This must be insisted upon, and we must not allow the plea that time is precious and the seed is good enough, for no inferior seed is worth sowing, and the time is certainly not lost in getting rid of it.

WORK ON THE HOME FARM.

The earliest crops of Mangold have been placed into heaps, and we have covered with straw and soil for winter. The leaves will be ploughed in at once, as we consider much more good is thus done to the land than is possible by turning the sheep in to consume the leaves. Unless sheep are folded upon land they do only a little good, and we have such an abundance of grass that there is no need to feed the Mangold tops. The heavy crop of acorns will do the sheep much good, as they are very fond of them, and always show improvement in condition when they have them, care being taken not to leave the sheep long enough under the trees to consume all they can at first. This precaution applies to every change of diet. Many a valuable sheep has been lost from eating greedily of Barley ears on the stubbles, of soft succulent Clover, and other green food. During the present autumn an experienced farmer lost half a dozen valuable ewes in one day from hoove or distension of the stomach with gas, generated by overfeeding with early Turnips having very long leaves. It should be clearly understood that hoove is not a disease, and is to be avoided by the exercise of ordinary precaution in giving sheep only a certain quantity of such food.

A mistaken but very general impression leads to the supposition that foot rot is induced by keeping the flock upon pasture at this season of the year. If that were so what would the great flock masters of the south do? Rely upon it much more harm is done to the sheep by persistent folding on arable land in wet weather. Give the flock a change as often as possible, even if it is only a gentle turn of two or three miles over a good hard road. Let there be a change of diet occasionally, and plenty of mixed food. Let the sheep always have access to rock salt. See that the shepherd has a sharp handy knife—not a huge weapon approaching the size of a dagger—and a supply of Gell's ointment, then with care there need be no very bad cases of foot rot. The ewes must be kept in a thriving healthy condition throughout the period of pregnancy if we would have good lambs. Anything affecting the health or condition of the ewe naturally tells upon its progeny. In other words, avoid extremes, and do all that is possible to keep them healthy and in fair condition always.

OUR LETTER BOX.

Sheep Folding on Grass (J. H.).—A hurdle to a sheep is the rule in folding, and your forty lambs or hoggets (as they should now be termed) will require about that number of hurdles. A new fold is usually made every day entirely upon fresh land. It is only during heavy snowstorms or exceptionally stormy weather that the sheep require shelter. As your sheep are young keep them in the same fold forty-eight hours, and then you may rest assured that the land is thoroughly manured, and nothing more will be required to insure full strong growth next year.

Mountain White Wheat (Idem).—This new Wheat has evidently a future on mixed soil and heavy land farms, and we certainly recommend you to give it a trial. It has several advantages over ordinary Wheat; such are its exceptionally stout straw, its large grain and ears, and its abundant yield of both grain and straw. If as a White Wheat it commands, say, 4s. per quarter more than ordinary Red Rivett, and yields a third more grain per acre, it is bound to come into general cultivation. We do not advise you to try more than a single field of it at the outset, you will then be able to see by comparison if it is really superior in every respect to your other Wheats.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. October.		Baromet- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.			In.	
Sunday	6	29.882	50.5	47.6	S.	50.3	57.5	44.0	79.9	38.9	0.140	
Monday	7	29.344	55.1	50.8	S.W.	51.3	58.8	50.3	83.4	49.9	—	
Tuesday	8	29.593	49.4	45.2	S.	50.9	59.4	43.0	93.6	37.2	0.135	
Wednesday ..	9	29.258	49.0	45.3	S.W.	50.0	56.7	43.9	92.9	38.1	—	
Thursday	10	29.131	46.4	46.3	S.E.	49.1	60.5	36.9	93.3	32.4	0.057	
Friday	11	29.471	41.8	46.7	N.E.	48.9	51.3	41.4	61.9	37.2	0.144	
Saturday	12	29.645	46.1	44.8	S.W.	48.7	58.4	40.4	95.1	35.2	—	
		29.503	49.2	43.7		49.9	57.5	43.0	86.1	38.4	0.376	

REMARKS.

6h.—Dull and damp early; fair day; damp and showery after 4 P.M.
7h.—Wet early; sunshine about 9 A.M., then dull, with occasional spots of rain; gale all day.
8h.—Bright morning; shower at 1 P.M., then fine again, with a little sunshine; wet from 4.30 to 7.30 and bright night.
9h.—Bright and fine throughout, excepting a few spots of rain about 1 P.M.
10h.—Fine and generally bright.
11h.—Wet morning, with high fog; lights necessary at midday, cleared gradually, and fair evening.
12h.—Fine and generally bright.
Temperature similar to the previous week, and not far from the average; rainfall rather below it.—G. J. SYMONS.



PLANT NAMES.

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THE subject of plant nomenclature is one upon which a diversity of opinions exists; each has its special advocates, is supported by particular reasons, and gains a certain number of adherents, yet the importance of the matter and the advantages that would accrue from the general acceptance of carefully considered rules render it eminently desirable some efforts should be made to provide an authoritative code. With the botanists we are not immediately concerned, but it may be said that for a considerable time some general principles have been recognised by the majority of those who are occasionally engaged in finding a suitable generic or specific name for a new plant. These primary rules have been elaborated, classified, and improved at various times, and the embodiment of the chief points in the excellent code adopted by the congress of botanists in Paris in 1867 cleared up many difficulties, and greatly facilitated botanical work.

For scientific purposes it is admitted by all that the binomial system of naming plants and the adoption of titles derived from the Latin or Greek are indispensable. Classical names, too, have the great advantage of coming within the knowledge of Europeans generally who may not have mastered the language of the person who bestows the title or who writes the description. This is the great point against those who argue in favour of the extended adoption of popular or vernacular names—*i.e.*, they are comparatively useless and meaningless in another country. It is true that classical names present an impediment to the popularity of a plant, and though "a Rose by any other name might swell as sweet," yet if we had been compelled to call it a *Sigmatostalix* or some such elaborate cognomen it would have been a serious bar to its advancement. When a botanical name is propounded to a lady or an uninitiated amateur the first question is invariably, "What is its English name?" The English language, too, is now spoken and written by so many millions of persons in Great Britain, and in the Greater Britain across the ocean, that a popular name does possess somewhat more value than it would in Italian and Spanish, or even in French and German. It therefore appears that two forms of nomenclature are required—first for scientific purposes, in which botanists are concerned in determining genera and species; and secondly, for popular use, in which every nation will employ names in accordance with its vernacular, and easy of pronunciation by the native tongue.

The preceding remarks refer more especially to the primary grouping of plants in genera and species, but the horticulturist has to face other and more serious difficulties in his efforts to provide a suitable form of nomenclature for the numerous variations either as seedlings or sports which develop under his care. He has not only to decide whether popular or scientific names shall be employed as in the first two groups, but he has an endless series of forms to deal with of quite different and less determinate value. It also becomes to some extent necessary to discriminate between varieties that have originated under cultivation and those that have been imported from other countries. It is probable that these wildlings in some far off land have arisen in precisely the same way as those in our gardens. They may be, and most likely are, merely seedlings from one or two parents, or possibly the result of crosses; still, they are Nature's offspring, and it is advisable, if only from an historical point of view, that the distinction

should be marked between them and those obtained under cultivation.

What has been done in this case is perhaps the best course that could be adopted, and it was that recommended by M. Alphonse Decandolle, practically consigning these introduced varieties to the care of the botanists and subjecting them to the same rules as those by which genera and species are named. The employment of classical names at once marks them as natural variations from a particular type, and distinguishes them from forms of garden origin. All the horticulturist has thus really left to determine is the form of nomenclature he will adopt for the plants which he is so busily employed in multiplying both in varieties and numbers.

It is apparently a portion of the duties of the Orchid Nomenclature Committee appointed by the Royal Horticultural Society to provide some assistance in this matter and with so excellent an authority as Dr. M. T. Masters for Secretary, there can be no doubt that every effort will be made to perform a useful service. That some confusion exists in the naming of Orchids is manifest, and it is very desirable a system should be formulated to remove the inconsistencies which at present prevail. But had the Council gone still farther and appointed a Committee to deal with horticultural nomenclature generally it would have acted wisely and given the work a broader and more substantial basis. However, it is possible for the Orchid Committee to do good work and to institute a precedent that might be followed by the Floral Committee acting on similar lines.

The chief difficulty at present with regard to Orchids is that classical and popular names are being bestowed indiscriminately upon varieties of equal value. That is most undesirable, and presumably one of the objects of the Committee is to determine which shall have preference; but it should not be an extremely difficult matter to decide, as few Orchids can be regarded as garden varieties if we except the hybrids now becoming so numerous. It is only in the case of a limited number of species, of which *Cattleya labiata*, *Odontoglossum crispum*, and *Masdevallia coccinea* may be taken as examples, in which the variations are so numerous and the distinctions so slight that any difficulty occurs. Whether these should be dealt with classically or popularly is one of the points to be discussed, and it would be well if all interested in the matter would record their opinions.

In the case of plants like *Chrysanthemums*, *Roses*, *Dahlias*, and *Carnations*, of which so many thousands of seedlings and sports have been raised under cultivation, the popular names generally adopted are decidedly better and more appropriate than the ordinary botanical form of nomenclature would be. These have respectively originated from one or a few species, which by repeated intercrossing have given rise to a progeny that can only be classified with difficulty under particular original types. Nothing of this occurs in the Orchids; the specific groups are so much more numerous, and their characters so much more clearly defined in the majority of instances, that except with a few *Odontoglossums* little difficulty is experienced in determining their positions.

After all it is of small consequence what names are employed for plants provided there be some uniformity in the method and the names be as short, simple, and expressive as possible. Unfortunately the three points named are too frequently overlooked, and it is only requisite to glance down any list of popular plants to see how needful it is to have a general reform. By the exercise of a little thought or care it would often be easy to provide names expressing some quality in the plant or flowers, but if that cannot be effected some neat crisp title might be chosen that would be scarcely less useful. The host of personal designations are objectionable in many ways; in the opinion of many persons it is equally as undesirable to call a Rose Mr. John Smith as it is to term an Orchid Smith's variety. By all means let us have popular

names wherever possible or advisable, but let them follow some recognised rules.

One thing is most important, and that is in the revision of nomenclature the alteration of accepted names must be performed with the greatest caution, as to flood horticultural literature with unnecessary synonyms would be a positive calamity. Botanists have quite enough to answer for in this respect, and have caused each other untold troubles and difficulties in research, but there is no reason whatever why horticulturists should follow suit. Names that have been given to plants by recognised authorities, or given official value by the award of certificates by properly constituted committees, should not be touched, and any new rules must be prospective, not retrospective.—LEWIS CASTLE.

RENOVATING AND PLANTING FRUIT TREES.

I AGREE with Mr. Iggulden, page 216 of the Journal, that old and inferior varieties of fruit trees are not worth the time and trouble of either root-pruning or grafting, as the best varieties of young healthy fruit trees are very reasonable in price. Rather than spend money on trying to patch up old worn out trees, have the ground properly prepared for young trees from a reliable source. I give a list of the varieties that I have found useful. I could name many more, but if anyone will plant some of the following I do not think they will be disappointed:—For kitchen use: Bramley's Seedling, Dumelow's Seedling, Domino, Maltster, Besspool, Small's Admirable, Catshead, Ecklinville Seedling, Stirling Castle, Golden Noble, Striped Beefing, Beauty of Hants, Warner's King, New Hawthornden, Alfriston, Lane's Prince Albert, Emperor Alexander, Blenheim Pippin, and Gloria Mundi.

A few reliable sorts of quality for dessert are Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Fearn's Pippin, Margil, Golden Winter Pearmain, Irish Peach, Scarlet Nonpareil, Trumpington, Worcester Pearmain, Court Pendu Plat, Lord Burghley, and Blenheim Pippin.

What I have learnt about planting fruit trees—bush trees as well, vegetables also—is that it is a mistake to go in for too many varieties. It is better to plant twelve trees of one sort than twelve trees of different varieties. In the first place, with so many sorts there is much trouble in storing. That is not all. When there are so many patches of fruit in the fruit room there never seems to be any to go on with, so to speak; but mark the difference if you happen to have six to twelve trees of one good variety and a good crop; in that case there is often a few for market.

With reference to renovating fruit trees I can say that I have had a fair share of experience—not always successful at first, but with practice and observation failures seldom occur. The first step to take in the improvement of existing trees or planting fresh ones is to see that there is a good heap of compost available to give the roots, composed of burnt refuse, or burnt clay is not to be despised. Some gardeners are able to procure plenty of old turf; nothing can be better where available. Unfortunately the majority have to make the best of what they can secure; in that case road parings and the scrapings are very useful, and most roots will take to them. A heap of three parts road parings, one part burnt refuse, with a barrowload of old mortar added to each cartload, also a peck of soot, will make a good compost. If when planting is proceeding 1 to 1½ lb. of bone dust and half-inch bones mixed is added for each tree that will improve it. I may state that much hard work and care are needed on the part of the chief when planting and renovations are taking place. It is useless to make holes less than 6 feet across, even for bush trees; give plenty of room for the roots, and keep them near the surface. Stake as soon as planted, give a mulching of 3 or 4 inches of half-decayed manure. The last week of October and the first fortnight in November is the best time for planting fruit trees.—DISENGAGED.

[One of the many good gardeners whom we should be glad to see engaged and doing good work in gardens.]

RESTORING SHRUBS.

THE beneficial effects resulting from mulchings of manure and dressings of artificial manurial agents is well known; equally beneficial, though perhaps not so well known, are dressings of soil when applied to ground which has been exhausted by the roots of shrubs or trees. The limits need not be struck at these, as we have proved how wonderfully recuperative to fruit trees, flowers, and vegetables is the addition of a few inches of soil to the ground occupied. But shrubs are so generally starved that it may be well to limit these

remarks to them. The necessity exists for fresh food most generally in cases where trees grow among and overtop shrubs, and where leaves are carted off before decaying. It does not matter about the quality of the soil used, so long as there is a sufficient thickness spread on; 4 inches in thickness may be taken as the least quantity to prove of any permanent good. Where the shrubs are thick the whole ground may require covering, but it must be noted that a good thickness of soil spread thickly under each shrub is much better than a less thickness spread over the entire surface of the ground. The rationale of this treatment does not depend entirely on the fact that the plant is in possession of a supply of food. I do not think that an increased food supply is even the main good, but rather we must look to the vitality imparted to the whole plant through the increase of young roots, and the quality of these roots as compared with the quality and quantity of these previous to the addition of soil. I have seen wonderful results follow in the next season's growth through the liberal application of fresh material immediately over the roots of shrubs. Those seemingly dying have been brought back to health.

Another means of putting fresh vitality into shrubs in cases where the soil is strong is simply to dig a circular trench at a sufficient distance from the bole of the plant not to stop growth; the width of the trench not be less than 12 inches, but 6 inches wider is better. A sufficient opening to work with freedom and dispatch is formed at the side, and the soil simply turned over and broken up, and that to a depth of at least 15 inches. When the shrub is circled the soil thrown out is put back and the work completed. If done now or early in spring the plant will show the first season the great benefit it has received from this operation. The reason is much the same as in the case of those dressed with fresh soil in sufficient quantity—viz., the emission of numbers of strong roots in a medium more suited to a healthy growth than hard soil unbroken. Another method of throwing fresh vigour into shrubs is the drastic one of cutting them in more or less severely according to circumstances; but this, of course, has the objection of altogether altering the appearance of their surroundings when carried to extreme lengths. However, by the method of taking a few feet off particular plants at intervals of every two years it is possible to help the health of plants very much, and in any case the digging of a trench round them, or the addition of fresh soil to the surface, will not be lost labour.—B.

NOTES ON PLUMS.

Now the Plum season is practically over, it will be interesting to hear which varieties bore well, and those that were failures. I do not think the Plum crop of 1889 can be regarded as a full crop in many districts. In Herts I think we are favoured with an excellent soil, suitable for all fruits, it only requires cultivating. The climate, too, is very satisfactory. Our trees are grown on walls as standards and bushes. The standards have borne the best crops. I fear the wall trees did not have sufficient water while they were swelling their crops, for they did not attain their average size. Our season commenced with that excellent Plum Rivers' Early Prolific; the trees all carried immense crops of medium sized fruits. This tree grows well here, but Mr. Pearson tells us it will scarcely exist at Chilwell. This clearly demonstrates the fact that it is necessary to ascertain which varieties are likely to thrive in any particular district before planting. Early Orleans also carried good crops, but the trees being nearly destitute of foliage they did not attain their usual standard. Belgian Purple is represented by two healthy standards, and they cropped well; it is a capital market Plum. Angelina Burdett is a good dessert Plum, ripening in September, but it is not a very certain variety. The young trees of Jefferson failed entirely; though a grand Plum, it is very uncertain here. Kirke's was a failure. Of Oullins Golden Gage we have some very fine trees; it is a good cropper and an excellent dessert Plum, has a fine appearance, but the thin skin soon bursts in wet weather. Green Gages were nearly all small, especially those on the walls. Reine Claude de Bavay, a good late Gage, but has cracked badly. Transparent Gage.—These have been very fine; it is a handsome Plum, and deserves to be largely planted. Belle de Septembre.—A total failure. Belle de Louvain.—Very light crop, but an excellent flavoured fruit.

Diamond is my ideal black Plum, it grows very large, and the fruits are very handsome; it travels well, and above all it is a sure cropper. Mitchelson's did not bear. Poud's Seedling does well as a standard, but the skin is rather too thin for a good market Plum; the fruits were very large indeed, and a beautiful colour, but we lost the majority of our crop with the wet. Prince Engelbert.—Tree forms a very compact top, makes a good standard, very good crop. Victoria.—Always a sure cropper and a good market Plum, but with the exception of our young trees, the fruit was undersized. White

Magnum Bonum.—A good dessert Plum, rather poor crop. Autumn Compôte and Belle de Septembre were both failures. Sultan.—A medium-sized black Plum, good cropper, but the wet spoiled them. The Czar.—Good vigorous Plum, capital cropper, but fruit were small. Coe's Golden Drop.—We had an average crop both on the standards and wall trees. Cox's Emperor.—A grand Plum; we have had very heavy crops of this variety, but I believe it does not succeed well in all districts. Washington.—This is a very handsome Plum, but usually a shy bearer; we have had a capital crop. Apricot Plum.—A very old variety, resembling small Apricots, makes excellent preserve. The Damsons did not bear. Bullace are a very heavy crop.—EXCELSIOR.

EUCHARIS AND THE MITE.

SOME time ago I was brought to task by a gardener for some remarks I made regarding the Eucharis mite. In those remarks I made bold to doubt the existence of such an insect, as I had never made its acquaintance. Now to the average mind this is only commonplace logic, but he clearly exposed my ignorance by proving that there was such an enemy to my favourite flower, as he had seen it on some plants under his charge. This evidence, coming from one by whose teachings I had often profited, made me anxious to learn something of this unknown enemy while it was yet at a distance. I would much liked to have seen the infected specimens referred to had they been in existence, but as they had been consigned to the fire I had to give up the idea of gaining any information from them. Ever since I saw the grand plants at Eaton Hall, nearly fifteen years ago, I have taken more than ordinary interest in Eucharis growing, and when visiting other gardens or nurseries always took close notice of any that were to be seen. In some places they were good, in others bad, while some had even reached the superlative degree of debility. No other plant was to be seen in such a variety of stages, and about no other was there more concern apparent, or more anxious inquiries made, the flowers in all cases being much prized. Of course in a brief visit there was not time to know fully how they had degenerated to their present condition; but in no case that came under my notice could the mite be blamed as the cause, although insects frequently were seen attacking the bulbs from the effect of their debilitated state. Like all other plants, if they are not in a condition to properly assimilate the food supplied to them, the soil turns sour and insects attack the roots or bulbs as the case may be, and ultimately place them beyond the reach of recovery if suitable measures are not taken in time to restore them.

In no instance that I have yet heard of has a mite been found on a healthy bulb, but in all cases the state of the bulb has been below par. Now I never doubted that a mite or any other insect attacked a Eucharis bulb when in an unhealthy state, but I have never seen an instance which led me to believe that this mite was the cause of its unhealthy condition. From the name Eucharis mite one would naturally infer that it was an insect roaming about for plants that it might devour, instead of being the natural result of unhealthy surroundings. Several cases have come under my observation which appeared to me to prove that the mite is the effect of debility instead of being the cause, but I will only briefly notice two at present. In one instance several fine plants which always bloomed satisfactorily were, through a change in the management of the place, completely denuded of their leaves as an easy manner to get rid of the mealy bug with which they were infected. This treatment so crippled them that, although many remedies were tried for their recovery, they had ultimately to be thrown away. At the time they were turned out of the pots many of the bulbs could be seen to be insect-infested, mites and other pests tunnelling them in all directions, their existence being clearly the effect of the treatment to which the plants had been subjected and not the cause of their decay. The other case to which I refer was a similar one, though caused by a different agency. Through neglect in turning heat on to the pits in which they were the plants were cut down to the level of the pots by frost. Until then they had been excellent specimens in every respect, but for years afterwards they were a prey to parasites and an eyesore about the place. The latter were some that I had in my mind's eye when I wrote the remarks alluded to at the commencement of this article, and to show that their recovery was not a temporary one I may state that at present they give every satisfaction to their owner.

These may be considered extreme cases not likely to occur in many gardens, and are only quoted here to show the result of a check which was clearly the result of their unsatisfactory condition. Now, although the origin of the mite may not in every instance be due to checks so severe as those just noticed, yet my observations lead me to believe that in some form this is the

primary cause of the evil, and I am inclined to consider over watering one of the most fruitful causes. This opinion was greatly strengthened by the criticisms to which my former article was subjected. Take, for instance, the plants of *E. candida* which were burned after a twelvemonth of the same treatment as the fine plants of *E. grandiflora*. These plants, we are told, received copious supplies of water, frequently three times a day. Let us compare the state of the two and see whether it is to be wondered at that one should fail while the other continued satisfactory.

The large plants of *E. grandiflora* were well established, and had not been potted for years. All growers know how quickly Eucharis bulbs are increased, so that they must have been a mass of bulbs and roots capable of absorbing any quantity of water that well drained pots would allow to remain. On the other hand, the plants of *E. candida* were newly bought, and allowing them to be average samples the plants were only moderately well filled with roots. In this state they were quite unable to withstand the drenchings of water which were comparatively harmless to the larger specimens, and as a consequence fell into ill health, after which they were examined and found to be affected with the mite. If overwatering was not the cause why should it not have affected all alike?

The Eucharis requires different treatment from most other stove plants, especially as regards watering. At all times water ought to be applied with care, but particularly after they have made their growth and undergoing a period of rest. At that time they emit fresh rootlets, which in their early stages are very tender, and an overdose of water or any unnatural treatment will quickly put them wrong. When the flower spikes appear more may be given occasionally mixed with soot water, which may be continued until resting time again. If this treatment is continued for a few years the pots will be full of bulbs in various stages, so that sometimes a succession of bloom is got from one plant. When they have reached this condition water may be applied more liberally, as some of the bulbs are always active.—M. D.

RENOVATING VINES AND BORDERS.

VINES unquestionably thrive for an indefinite period in a soil suited to their requirements, and where they have a good extent of rooting area, as may be seen in many places. In many cases, however, the roots have extended far beyond the prepared border, and are practically beyond control. We have had charge of Vines the roots of which had a narrow border of only 2 feet wide, and were somewhere beneath a gravel walk 2½ yards wide, and the turf of a lawn beyond. One such Vine covered 1000 superficial feet of roof trellis, and in the 2 feet border there were no roots of consequence, or if there had been very little could be done there. The Vine had been weakened by continuous overcropping, and to seek renovation by an increase of growth was the only available means. The Vine had been pruned on the spur system for many years. We took up fresh canes—they started weakly, but gained strength as they gained length; the spurs were reduced, so that they were not nearer than 18 inches on opposite sides of the rods, and they showed before the season was over a decided improvement, as might be expected from the greater space alike of exposure to light for the foliage and the encouragement of laterals.

The pruning pursued afterwards was a modification of the spur and rod systems, and the crops were in every respect satisfactory. The roots had only 80 feet superficial space of border to support a Vine covering 1000 feet of roof surface. When, therefore, the Vines are in borders that do not admit of renovation we advise something to be done to their heads by encouraging fresh growth, even if it must displace some of the existing, affording it due space for development, the principal leaves never being crowded, in order to promote a complete assimilation of the sap and the storing of food in the wood and buds. This, with due care in culture and judicious pruning at the proper time, is, according to our experience, invariably attended with better results in the season following the procedure, and with persistence ultimately effects beneficial issues little short of those attending difficult, expensive, and not unfrequently needless border renovation. What little border there may be should be made the most of by mulching with rich material to encourage roots from the collar, and during dry time all through growth liquid manure should be given, and especially when the crop is about to colour, accompanying it with a little more freedom to the laterals, so that larger supplies of aliment may be applied and withdrawn from the impoverished subsoil, from which the main supplies of uncontrollable borders are drawn by the Vines in the perfecting stages of their growth.

Borders that are under the control of the cultivator leave no excuse for unsatisfactory Vines. With such no time should be lost as soon as the leaves have perfected the buds and wood, and whilst they are still upon the Vines in removing the soil down to

the roots and picking it from amongst them, so as to displace as much as possible. In the case of the border being unsatisfactory and the roots few and deep, it will be necessary to remove all the old soil and renew the whole border, commencing with the drainage, which should be a clear 9 inches to 1 foot thick, having a layer of fine material at the top, nothing answering better than old mortar rubbish, a 3-inch thickness over 9 inches of brickbats, &c. The drainage must have a tile drain under it to carry off the superfluous water. Two feet depth of soil is ample, and the roots should be laid out evenly in the top foot, encouraging those from the collar by laying any that proceed therefrom just beneath the surface. The whole should be made firm and the compost moderately dry. If the roots are inside and outside, one part may be done one year and the other the next without any danger of loss of crop, care being taken to preserve all the roots possible, and to keep them from the drying influences of the atmosphere whilst the work is in progress. Mulch the surface with a little short material, preferably fresh horse droppings, and cover outside borders with a good thickness of leaves or other protective material. As regards soil good turfy loam is best, but any ameliorated soil will grow good Grapes. Preference should be given to medium textured soil, that overlying clay being better than overlying sand. The most suitable is a rather strong loam overlying the limestone formation and interspersed with cretaceous matter and flints.—G. A.

PREPARING FOR BULB PLANTING.

Now that the frost has spoiled the summer arrangements in the flower garden it is time to prepare for filling the beds with bulbs for spring effect. Anyone employed in this work will find it necessary to make the best use of all fine weather until the work is completed, as the bulbs are losing valuable time whilst remaining in the shed after October has commenced. Presuming that all arrangements have been made beforehand, and sufficient bulbs procured to fill the beds allotted to them, let the latter have a dressing of soot, or lime if procurable, to assist the former to battle against any disease, or fungus, that is always ready to attack the more tender or delicate kinds. If a heavy dressing of fresh soil or well decomposed manure can be dug in, so much the better, as by using the beds each year for bulbs the soil naturally gets worn out, and a change becomes absolutely necessary. It is a good plan to have a quantity of compost prepared, say six weeks or two months beforehand, so that it is in readiness whenever required. If large numbers of beds are to be planted select some fresh loam, or what is more suitable, edgings of walks that have thoroughly decayed, say about four or five cartloads; add to this about two loads of leaf soil and an equal quantity of cow manure and coarse sand, turning it two or three times to thoroughly mix it, allowing it to remain in the heap till required. Spread this on the beds and let them be deeply dug, which is essential for successful cultivation.

This treatment applies to Hyacinths and Tulips more especially, and some strong growing Narcissi also, as they are gross feeders, but many of the Narcissi do much better without manure. *N. maximus* is one of these and often fails to flower when manure is used, although one can hardly wish for a finer variety when grown in fresh sandy soil.

When the beds are in readiness commence with the Narcissi first, if possible, as they are the most impatient to start into growth. If one variety only is used in a bed it is much the better plan to line the beds out before commencing planting, placing the bulbs evenly on the surface, not too thinly, as much of the beauty of the bloom is lost when the bulbs are too sparingly used. Hyacinths and Tulips should be treated in the same way, but beds of these will be greatly improved if a broad band of Crocuses is planted round each. The Crocuses are quite over in spring before the other bulbs are in flower, but the foliage round the edge gives a decided finish to the bed. It is hardly necessary to give the names of varieties most suitable to grow, as the list of each is a long one, and no difficulty will arise in making a good selection. To those about to replant *Liliums* I would say, Lose no time, as the bulbs have already commenced growing, and if planting is delayed they will experience a check from which it takes them some time to recover.—F. G.

ROOT-PRUNING FRUIT TREES.

THIS is an operation that now demands attention, as at this period of the year roots of most trees are active, and if the work is done early and carefully there is a chance of the trees re-establishing themselves before winter sets in, and are consequently better fitted to make good their loss of roots they are deprived of before another year. Root-pruning acts like magic sometimes in bringing barren trees into a bearing state, especially when unfruitfulness

is brought about by undue luxuriance. When trees are making very strong shoots they are found on examination to be making roots in proportion, and so long as this goes on fruit prospects are very much jeopardised. It is the small fibrous roots which command the formation of fruit spurs, and in some soils there is difficulty in maintaining a fruitful condition. In gardens where the surface is light and open, with a clayey subsoil, there is great tendency for the roots to go deep in search of moisture, especially if the aspect is at all open and windy. With soils of this description mulching is of considerable value, of no matter what kind so long as it creates and maintains moisture.

Old and exhausted trees may be invigorated by digging a trench down as deep as roots are found, fresh soil being added, with which is incorporated some mortar refuse or lime and bones. It is not advisable to add any animal manure, as this is better applied in a liquid state, but any accumulation of burnt or decayed garden refuse may be given with advantage in moderate quantities if well mixed with the soil. All roots that are severed should be cut smooth with a sharp knife, as affording assistance in encouraging a quick and perfect callus from which fibrous roots eventually issue.

With large trees root-pruning should not be completed the first year, but a half circle, as it were, dug round at one time, the remaining half left until another subsequent period. It is important that when the work is in hand the ball of roots should be undermined quite up to the trunk or main stem, as large tap roots frequently take a direct downward course, and if these are not severed the work done will not have the desired effect. The space beneath the tree requires that the soil should be well trodden in, otherwise there is danger of its shrinking, which if the tree was unable to sink with it would leave a cavity and seriously interfere with root formation. Should the soil be at all dry it must, as the filling in proceeds, be well watered, this serving to fill up crevices more effectually and quickly than when it is allowed to sink naturally. Moreover, it tends to sustain the tree under its surgical treatment. It is a very good plan when trees are operated on at the roots that the necessary pruning be done at the same time, so that the demands on the roots may be correspondingly decreased, and there is also less surface open to the wind forces.—W. S., *Frome*.



WATERING ORCHIDS.

PLANTS in the East Indian and Mexican houses must be watered with considerable care. Be careful not to keep them too wet at their roots, and on the other hand do not allow them to become so dry that their stems and foliage will shrivel. Considerable judgment is needed in this matter during the autumn and winter months. Plants that have completed their growth and have fleshy pseudo-bulbs need only sufficient water to keep their roots healthy and the leaves and stems plump. *Cypripediums*, *Vandas*, *Aerides*, *Saccolabiums*, and others suffer considerably if they are kept too dry; the material about their roots should not be destitute of moisture. When water is used it should be of the same temperature as the house or a few degrees warmer. Cold water when applied to the plants, especially when allowed to fall upon their foliage, frequently results in the latter "spotting," which destroys their appearance for several years. Use the syringe judiciously. On fine mornings no harm will follow slight syringings provided air can be admitted and the water that lodges about the plants is evaporated before it is necessary to close the ventilators. Damping the paths, stages, and amongst the pots may still be practised. It is a mistake to discontinue syringing and maintain about the plants a dry burning atmosphere. This treatment soon results in the plants being destroyed by yellow thrips.

PHAIUS GRANDIFOLIUS.

If these plants have been well looked after they will have grown strongly and have clean healthy foliage. These plants are often destroyed by overwatering early in the season, and the foliage requires trimming to render them presentable at the present time. The atmosphere in which the plants are grown should not be kept too moist or the syringe used injudiciously, or the foliage at this season will soon become spotted. Supply water carefully, but never allow the soil about their roots to approach dryness. Keep the plants in a temperature of 60° to 65°, and give them weak

stimulants every time water is needed. Soot water in a clear state and liquid manure made from cow manure, given alternately, will prove beneficial. Aphides are troublesome after the flower spikes have attained 18 inches or more high. The best means of destroying them is by slight fumigations. This plant will bear retarding after the flower spike is once visible in order to form a succession. If they are removed gradually to a temperature of 50° to 55° no harm will result. While in a lower temperature water must be given with the utmost care or the roots will perish. Few Orchids are more serviceable than this for conservatory decoration. When grouped with other decorative plants their noble spikes of bloom are most conspicuous.

CALANTHES.

These are often seriously injured in their last stages of growth by withholding water suddenly and ripening their foliage prematurely. The foliage certainly looks unsightly for a time, but this cannot be avoided, and is no reason for removing it in an unnatural manner. The supply of water must be gradually decreased until the whole of the foliage has turned yellow, when it can be removed and water withheld altogether. Weak stimulants may be given until the foliage has advanced to maturity. Those for late flowering are still growing freely, and should have a light warm position near the glass. They will do well on a shelf in a temperature of 65° now that the soil will not dry so rapidly. We have found that they do better, consequent on becoming better ripened in this position than when arranged together on a bed or stage. In the latter they shade one another and prevent full light penetrating to their pseudo-bulbs, while on a shelf they are fully exposed.

DENDROBIUM WARDIANUM.

A few flowers are always acceptable for buttonholes, bouquets, and small glasses, and therefore we prefer to have a few plants in flower to maintain a succession in preference to a large number of plants flowering at the same time. Some that flowered early last year are already starting into growth in a cool structure. The flower buds are also very prominent. A few of the most forward are being placed in an intermediate temperature, and will be allowed to come into flower. The plants should be watered with great care, giving them no more than is really necessary to keep them fresh and plump until the new growths commence forming roots, when the supply must be gradually increased. Keep plants slowly moving from the time they start into growth, but it is unwise to hurry them, or they will make their growth and have to ripen it in spring instead of summer. A few small specimens of *D. nobile* may also be started in the same manner. For this purpose young plants in from 5 to 7-inch pots are decidedly the best. With a little care and forethought the flowering season of these Dendrobies may be considerably extended.

DENDROBIUM DEVONIANUM.

For a few years after this variety is imported it appears to grow freely and do well. It then appears to dwindle and annually become weaker. Frequently the plants are seriously injured by allowing them to flower before they are established. Strong imported plants usually flower profusely, and when the flowers are removed almost directly they make their appearance they grow more strongly than when allowed to flower. The plants at first also produce growths on the stem freely, and if these are removed and growth induced from the base they all the sooner become established, and often do better than those that are allowed to become a mass of small growths. This Orchid needs the most careful treatment in ripening its pseudo-bulbs. Water must be given carefully and the plants allowed time to ripen thoroughly up to their ends. The best results follow thorough ripening in the house in which they have made their growth before removal to cooler quarters.—ORCHID GROWER.

THE BULBOPHYLLUMS.

THOUGH at least 100 species of Bulbophyllums have been described by botanists few are known to cultivators, and those rank chiefly as varieties. Some are extremely interesting structurally, and prominent amongst these is *B. barbigerum*, which has been thus described by Lindley:—"The lip is one of the most extraordinary organs known, even amongst Orchidaceous plants. It is a long, narrow, flexuose, sharp-pointed body, closely covered with a yellow felt; just within its point is a deep purple beard of exceedingly fine hairs; on the under side, at a little distance from the point of the lip, is another such beard; and besides these there is, at the end of the lip, a brush, consisting of very long purple threads, so exceedingly delicate that the slightest disturbance of the air sets them in motion, when they wave gently to and fro, like a tuft of threads cut from a spider's web. Some are of the same thickness throughout, others terminate in an oblong club, so

that when the hairs are waving in the air (and I do not know that they are ever entirely at rest) a part floats gracefully and slowly, while others are compelled by the weight of the glandular extremities to a more rapid oscillation. Nor is this all. The lip itself is articulated with the column by such a very slight joint that to breathe upon it is sufficient to produce a rocking movement so conspicuous and protracted that one is really tempted to believe

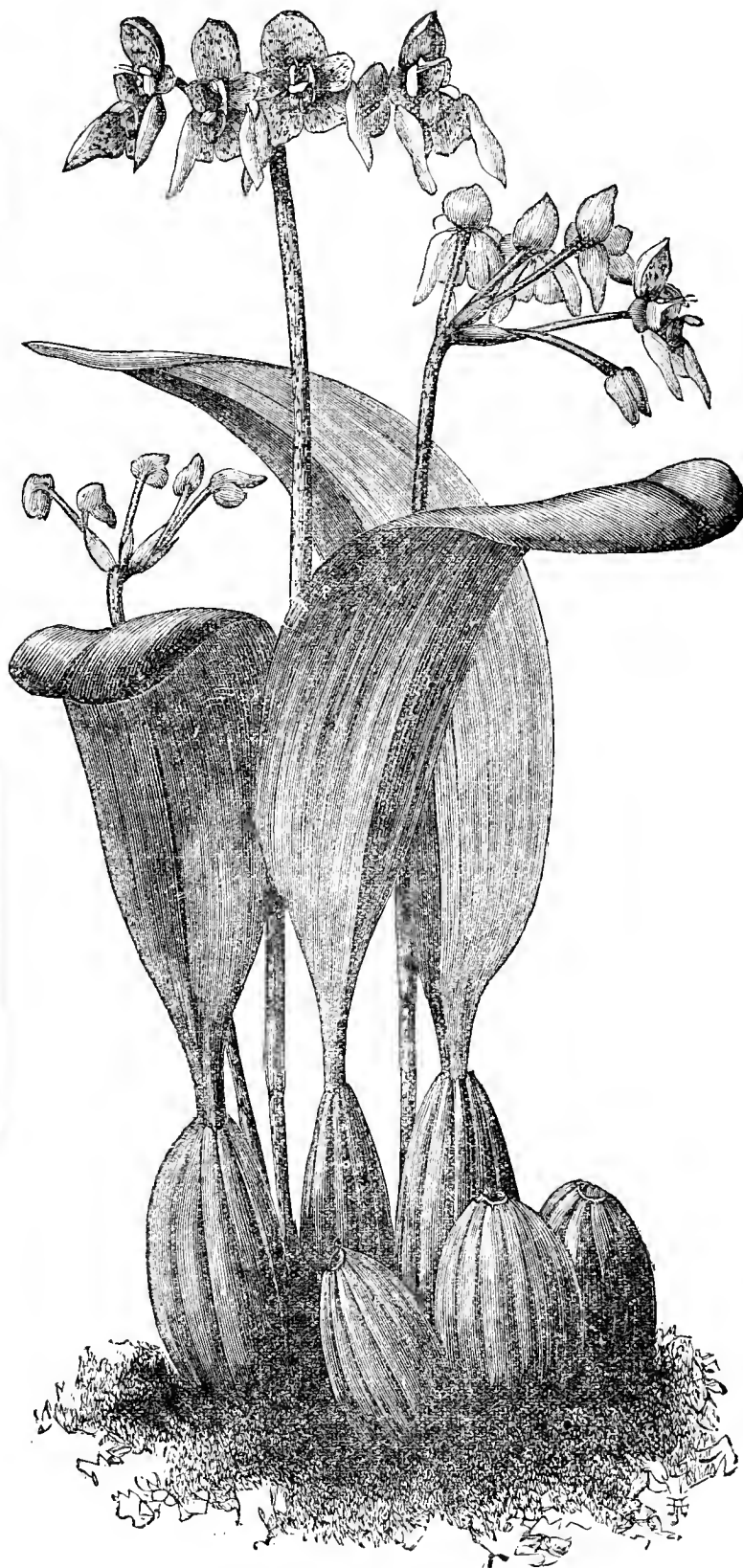


FIG. 42.—BULBOPHYLLUM UMBELLATUM.

that there must be something of an animal nature infused into this most unplant-like production."

Most of the species have small flowers, but *B. siamense* is an exception to this, as its flowers are nearly 3 inches in diameter, pale yellow striped with purplish brown. *B. Lobbi* also has large flowers, deep yellow, spotted at the back with purple. *B. reticulatum* is also attractive both for its foliage and flowers, the former beautifully veined with a dark green on a lighter ground, the flowers white striped and spotted with purple. *B. umbellatum* (fig. 42) is also worth a place with the others, the colour being

similar, but the flowers are individually smaller than those first mentioned, though they are borne in umbel-like heads. It was shown from Kew some time ago, and it has recently flowered again there. Like most of the others it is of easy culture, succeeding either in small pots or shallow pans, with good drainage, in a warm house.

LIQUID MANURE FOR FRUIT TREES.

THE question of "R. H. S." properly ought to have been addressed to Mr. Wright, to whom is due the credit of the recommendation to apply liquid manure to fruit trees, especially in winter. However, I will do the best I can to reply to it. My answer is not even a qualified no, but an emphatic yes. Apples, Pears, and other fruit trees when once established do not require mulching; cold at their roots in winter does not injure them. A mulching of leaves, inasmuch as they contain little plant food is scarcely of use except for protection from cold. A top-dressing of manure is beneficial in proportion to the plant food it contains, and a soaking with good liquid manure is valuable in the same proportion. "R. H. S." says that his soil is "cold and clammy," by which I suppose he means a strong clay loam. Such a soil would be more likely than a light porous soil to be benefited by liquid manure, as it is more capable of extracting every particle of the food elements from the liquid, leaving only the water to percolate away. Even if the soil of "R. H. S." were not well drained he need have no fear that 2 or 3 inches of fluid in addition to the ordinary rainfall would injuriously affect his fruit trees, although his soil be cold and clammy. An excess of rainfall in the winter above the average certainly does no harm except so far as it may carry away in the drainage water some of the elements of plant food; but if the excess be in the form of liquid manure the food remaining in the soil is infinitely greater than the loss by drainage, and in the event of a deficiency of rainfall, as happened in the winter 1887-8, the water in the liquid manure is as, or perhaps more, beneficial than the manure itself.—EDMUND TONKS.

FRUIT JOTTINGS.

SAWBRIDGEWORTH is a quiet Hertfordshire town of moderate extent and population, yet the name has been rendered familiar to all horticulturists throughout the length and breadth of Great Britain by its association with the historical and celebrated fruit nurseries of Messrs. T. Rivers & Son. There during two or three generations have fruit culture and improvement been made a practical and scientific study, and the results, as seen in the numerous additions to the lists of good fruits that find a place in the best gardens, and the beautiful samples staged at exhibitions, afford abundant proofs of the success achieved. Increasing the number of useful fruits and extending their season is a public service of an important character that merits recognition quite apart from the commercial advantages accruing to him who is fortunate enough to secure such novelties. Fruit is regarded as something more than a luxury now. It is a part of the food of the people, and as such its improvement or increase becomes a matter of national importance. Beyond this, however, experiments in profitable fruit culture have been undertaken at Sawbridgeworth, and many a valuable lesson has been learned there by visitors, who have turned the information gained to good account elsewhere. Specialists and enthusiasts do the best work in their respective studies or professions, and when enthusiasm is tempered by experience and guided by a close attention to the financial aspect of the work, we do not expect to find anything of a visionary or fanciful character. So it is at Sawbridgeworth, Mr. T. Francis Rivers adding to his late father's long experience his own keen observation and critical knowledge of fruits and their culture, has developed his 300 acres of land into an admirable nursery, farm and school of pomology that is in its way quite unsurpassed. A long-desired opportunity of visiting the Sawbridgeworth Nursery was recently afforded, so a bright October morning last week found us speeding from Liverpool Street down to Harlow, the nearest station for a traveller from London. Mr. T. F. Rivers was quickly found, and an inspection commenced that kept us well occupied for some hours. It would be useless to attempt to record in detail all that was seen or talked about that morning, but a few of the leading points may serve for a paragraph or two appropriately under the head of "jottings."

STOCKS.

Nine or ten acres of vigorous young trees, one, two, or three years old, were first examined—Apples, Pears, Cherries, Peaches, and Plums, in all the best varieties, the young trees as healthy, strong, and even as anyone could desire. The Apples in particular, which occupy a large proportion of the space, are most noteworthy, and for all of them two stocks only are employed. For orchard trees and standards the Crab is used, and for dwarf trees a seedling from the Nonesuch is exclusively used in preference to any of the Paradise stocks. After many experiments had been tried, and with the experience of many years, this Nonesuch stock has been found to be the most satisfactory for promoting free yet compact growth and early fruiting. It was raised by the late Mr.

T. Rivers from the old Nonesuch, an Apple of good quality, and remarkable for its quick and regular cropping. What first attracted attention in the seedling was the formation of a number of fibrous roots at the "collar" of the stem, level with the ground or a little above it. The roots generally were also found to be very fibrous, abundant, and near to the stem, thus presenting all the qualities needed in a stock for garden trees. This was soon taken advantage of, and every experiment afforded additional proof of its value, until, as already stated, it has been found expedient to employ that and the Crab alone. Trees one year old from the bud were seen with clean, straight stems, 5 and 6 feet high; others two years old, which had been cut down the previous season, had several good branches, while the three-year-old trees were compact and handsome bushes, ready for bearing. All the best varieties were represented; but of the most popular, such as Ecklinville, Warner's King, Duchess of Oldenburgh, Ribston Pippin, and Cox's Orange, there were large breadths, comprising thousands of useful young trees. Of Pears also, on the Quince there was an excellent collection, and admirable samples of two-year-old trees were noted. Peaches like Willows, Plums and Cherries all thriving, and evidently enjoying the position they occupied—a warm slope to the south, on a retentive yellow soil.

Too much importance cannot be attached to the selection of stocks for trees, and it is unquestionably a matter that has at times been rather seriously neglected, to the cost of the planter. No after care or culture can correct a mistake in this respect, and if after a year or two it is found that trees are failing or becoming irregular and unsatisfactory, it means not only an actual loss in expenditure, but a loss of time that is far worse. Not long since we visited a newly formed fruit farm planted a year or two ago, and the differences observable in two series of trees from different sources were remarkable, and in one respect deplorable, for a large space was occupied with trees that showed by their erratic growth or stunted condition that the stocks had been carelessly selected or were quite unsuitable. The same varieties represented in the other trees were as even in growth and as healthy as could be wished. All were of the same age, were planted at the same time, and had received precisely the same treatment, yet in the one case probably half the trees would have to be removed and others substituted.

DWARF TREES.

At Sawbridgeworth innumerable excellent specimens of dwarf fruit trees are seen, and these constitute one of the specialties of the nursery, for Mr. Rivers has proved the advantages arising from their employment. He points to Apples, Pears, and Plums of all ages up to thirty years and more, fine healthful trees in full bearing, not occupying one-half the space that an ordinary orchard tree would do, yet giving bountiful returns. Trees that have from 1 foot to 2 feet of clear stem, then a well thinned bushlike head not exceeding 10 or 12 feet high, and consequently every part is readily reached without a ladder or steps, and the time saved alone in gathering fruit is an important consideration. For private gardens, and where land is planted in the market garden style of close cropping to utilise every foot of highly rented land, such trees are invaluable, and plenty of examples can now be seen where this has been carried out successfully.

PROFITABLE PLANTING.

It may not be out of place to give a few particulars respecting the plantation formed at Sawbridgeworth as experiments in profitable planting, particularly as they have proved to be exceptionally satisfactory. In one large division of the nursery, comprising several acres, we find Apples and Plums planted in alternate rows, 12 feet apart, and the same distance between the trees, the spaces between the rows being occupied with two rows of Black Currants, the land being kept hoed and dug. From this plantation wonderful returns are secured, the Apples including the best market sorts, and the Plums are mainly Rivers' Early Prolific, of which tons of fruit are produced every year. In another quarter of the latter, standard trees of good age, the distance between rows and trees is the same, but in a new plantation of Plums they are 6 feet apart in the rows, the latter being the full distance of 12 feet apart, thus admitting of the removal of every alternate tree when sufficiently advanced in growth, yet occupying the ground profitably in the meantime. Then we come to a quarter of upright cordon Apples in rows 6 feet apart, and 4 feet between the trees, which almost seems like crowding, yet space is found for a row of Gooseberries between each two lines of Apples. The latter have their growth pinched in summer, but are not much restricted until autumn, when they are cut hard back to the spurs in readiness for another season. Most of those examined were ten years old, in capital health, and yielding excellent crops of fine fruits.

There are, of course, the usual nursery stocks of trained trees in all stages, vigorous young trees, and others more advanced in life, but still in fine condition for planting, and Mr. Rivers gives an instance of the of the close rooting properties of the Nonesuch stock in the case of trees of Cox's Orange Pippin which, after remaining in one place for fourteen years, and not root-pruned, were safely removed, and are now, at twenty-four years of age, still in full bearing. Trees seven or eight years old are frequently removed. But we must turn to another department of the Sawbridgeworth Nurseries, and one for which they are widely noted—namely,

THE ORCHARD HOUSE.

Structures of this kind have caused a good deal of horticultural contention; they have been highly praised by some and condemned by

others, yet the undisputed fact remains that in many establishments they are not merely useful adjuncts to the ordinary arrangements for fruit supply, but also a source of considerable profit. The Messrs. Rivers, both father and son, have amply demonstrated the success of this phase of fruit culture, and the example set has been widely followed, not only by amateurs but by the trade as well. For Peaches and Pears they are especially useful, but some grand Apples are produced by trees in pots in such houses as the leading exhibitors know full well.

It is surprising to what a length of time trees will continue in health and bearing condition with an annual potting and top-dressing such as they there receive, for trees of the old English Galande Peach are shown thirty-eight years old. Then, too, with the numerous seedling varieties of Peaches raised by Messrs. Rivers a long fruit-bearing season is secured from the beginning of July until the end of September, three full months, such as at one time could never have been expected. The size and quality of Peaches and Nectarines thus secured are excellent, and from the numerous long spacious houses occupied with the trees most valuable crops are obtained, realising "top" prices in the market. Houses of this character cost little more than a good shed, yet if well managed they give returns surpassing those of much more costly houses. One point is, however, too frequently overlooked in regard to pot trees in orchard houses—*i.e.*, satisfactory results must not be expected without corresponding attention. Trees under glass necessarily require more care than they do out of doors. Neglected insect-infested trees are deplorable objects and utterly useless; healthful, cleanly trees will compensate their cultivator with liberal returns.

But I must stop, for some of my jottings at Sawbridgeworth will keep for another week, and they might encroach too much on the Journal's space if dealt with now.—POMONA.

THE VEGETABLE GARDEN.

[A paper read by Mr. A. Pettigrew at the meeting of the Cardiff Gardeners' Association October 2nd, 1889.]

It requires some forethought and perseverance on the part of the cultivator to keep up a regular supply of good vegetables throughout the year. To accomplish this and be successful, he must be always looking forward, and be preparing ground, as soon as it becomes vacant, for certain crops, which must be sown or planted in good time to get the best results. When crops are put in late, no matter how good the after cultivation may be, they never do so well as those planted at the proper time. It is wonderful the effect that even a few days late planting or sowing makes on a crop. Observe, for instance, that where plants have died in the main crops of, say, Brussels Sprouts, Cauliflower, Cabbage, or Broccoli, after planting, and their places been filled up by fresh plants, they seldom make up in those that were planted at first, and generally do very little good.

The weather must be studied too, and no crops put in unless the ground has been thoroughly prepared and is dry and in good working condition. It is a mistake to work ground when it is wet and adhesive; and the crops then, as a rule, never do so well as those put in when the ground is dry.

The subject of vegetable gardening is too extensive to do justice to in a short paper like this. It is a subject that volumes have been written on, and it is not exhausted yet. There is much to be learned from books on the cultivation of all kinds of plants, but I believe the best learning any young man can get is from practical experience and by ocular demonstration. Anyone with ordinary ability can learn as much in five minutes, from being told and shown how to do a thing, and the results that will follow from doing it explained, as would take him a long time to learn from books.

Winter is the dull time of the year, when Nature is supposed to rest and recuperate herself. But there is not much rest in a garden at any season, as work of some kind requires to be done regularly all through the year. In winter the gardener prepares for spring and summer; and in summer he prepares for autumn and winter, and so on, as the seasons roll round.

Perhaps I should state that kitchen gardening in the north is different in many respects from what it is here. In the north the seasons are later, the climate is much colder, and the summer is shorter; and on that account they seldom take more than one crop off the same piece of ground in the year; whereas in the mild climate, as soon as one crop is taken off another is put in, and the ground is always under crop, with perhaps a few exceptions where late Peas, Potatoes, Beet, Onions, and Carrots have been. It is a common thing in the north to have more than the half of the kitchen garden dug or trenched during winter for frost and snow to disintegrate and ameliorate the soil, and to kill insects. I question very much, however, if the frost kills as many of the insect pests as it gets credit for, even in exceptionally severe winters. Nature has provided them with ways and means of protecting themselves from the hardest of frosts.

From the above remarks it will be observed that a calendar of garden operations for a kitchen garden in the south would not do for one in the north, and my remarks will be confined to gardening in the south.

Digging and Trenching.—These are important matters, and should receive the best attention of the workmen. When dung is used it should be spread regularly over the surface, and dug deeply into the earth, and the ground kept level all over, no matter whether it is rough digging to stand over the winter, or fine digging in spring for sowing or planting. Nearly all the writers that I have read on the subject, if I remember rightly, but it is long since I read up the subject, recommend that all the bare ground in the garden not under crop should be trenched or dug in the autumn with the view to its getting the full benefit of the winter frosts to operate on it, and to make it work well in the spring. The frost, no doubt, is beneficial to heavy retentive soils, but I do not think it does much good to dry light ground to have it turned up in autumn, and exposed to all kinds of weather during winter.

My observation and experience lead me to think the harder and firmer light soils are kept the better crops they will yield, and in my opinion most crops do best when the ground is manured and dug immediately before planting or sowing, not only light ground, but most kinds of ground. When this plan is adopted the ground is trod firmly all over after it is dug before planting or sowing in it. In light soils rough fresh stable manure is preferable to decayed manure. It lasts longer in the ground in this state than if it was decayed, and supports the plants better through the growing season. In heavy soils decayed manure is best, as rough dung takes longer to decompose in it, and get into the state that plants can assimilate it in their growth.

Sowing and Planting.—The mistake of sowing seeds and planting too early in the season is as bad as sowing and planting too late. When Celery, Leeks, and many members of the Brassica family are sown in heat too early, they run to seed and the crop is lost. Potatoes when planted too early are liable to be injured by frost, and Peas suffer from cold and wet and the ravages of birds and slugs.

Onions, Leeks, Parsnips, Peas, Broad Beans, Spinach, Lettuce, and Radish should be sown in the open as early in February as the state of the weather will admit, and Jerusalem Artichokes, Shallots, Garlic, and Potato Onions planted. I think it is hardly worth while saying that Onions, Parsnips, and Lettuce should be sown in drills, the former a foot apart, and the two latter 18 inches, and not more than from 2 to 2½ inches deep; Beans 2 feet, and Peas 5 and 6 feet apart. Jerusalem Artichokes should be planted in drills 2 feet apart, and from 5 to 6 inches deep. Garlic, Shallots, and Potato Onions a foot apart, and 6 inches in the drill. In planting these I prefer covering the bulbs to having them planted on the surface, as when so planted they are liable to throw themselves out of the ground when they begin to grow and have no top pressure to keep them down until the roots take hold of the earth. When seeds are good and can be relied on thin sowing should be adopted, and Onions should never be sown so thick as to require thinning for the principal crop. If extra large specimens are wanted for exhibition purposes that is a different thing, but those are generally sown in pans and boxes under glass early in the season, and potted off into small pots, hardened off, and planted out after all danger of frost is past. Of vegetables none but the best strains should be grown. It is as easy to grow the very best varieties as the worst, and cultivators cannot be too careful in their selection of seed. The loss in every way from the use of bad seeds can hardly be over-estimated.

A long article might be written on the cultivation of each of the vegetables I have named, but I will content myself by giving a calendar for the sowing and planting a few of the principal crops in each month.

March.—This month is reckoned the end of winter and beginning of spring. It generally "comes in like a lion, and goes out like a lamb." March and April are the two busiest months in the garden. The main crops of some of the principal vegetables should be sown from the beginning to the end of the month, such as Cabbage, Cauliflower, Brussels Sprouts, early Carrots, Turnips, Radishes, Lettuces, Beans, Peas, and Spinach. The Brassica family should be sown in beds 3 or 4 feet wide in a warm sheltered position, and protected from birds, which are fond of the seeds just as they germinate, and would soon destroy them if they were not protected. I have seen many methods tried for this, but I prefer covering the beds with netting to all other kinds of protection. Horseradish, Rhubarb, Chives, Seakale, and Cabbage plants may be planted any time during the month in fine weather, and all spare ground dunged, and dug as soon as the crops are taken off.

April.—The weather during this month is generally stormy, inter-

persed with gleams of sunshine, rain, hail, snow, and frost. The remainder of the principal crops should be sown now from the beginning to the end of the month. Asparagus, Beet, Turnips, Carrots, French and Scarlet Runner Kidney Beans, Vegetable Marrows, Salsafy, Scorzonera, and Broccoli, and a succession of Beans, Peas, Lettuce, and small salading. Plant Cauliflower, Onions, and Leeks that have been raised early and protected in frames.

Towards the end of the month keep the hoe busy going through crops in drills to kill weeds, and keep the surface of the ground fresh and clean. Hoeing in dry weather between vegetable crops is a great factor in their successful cultivation, and is constantly practised by the best growers, even when no weeds can be seen. Stake Peas, and mould up early Potatoes as soon as they require it. Dress Asparagus beds, remove all winter protection from Globe Artichokes, and make new plantings if necessary of them and Rhubarb, and keep walks and everything clean and tidy.

May.—Vegetation makes great progress during this month, and, as recommended, the hoe should be kept going regularly through the different crops to kill weeds, and to keep the ground clean. Sow successions of Beans, Kidney and Broad, Peas, Radish, Lettuce, Spinach, and transplant Celery in trenches, and Leeks in drills.

June.—The weather is sometimes cold in the beginning of this month, but as the longest day approaches vegetation makes great strides. I have observed, however, in some seasons there was very little growth till after the longest day, when all kinds of vegetables made rapid growth.

A sowing of Peas may be made in the beginning of the month for the latest crop, and a succession of Turnips, Lettuces, Radishes, and early Carrots for autumn use. Plant Cabbages, Cauliflower, Broccoli, Savoys, and all the Brassica family. Stake Peas and Runner Beans. Hoe, weed, thin out crops, and keep walks and crops clean, and everything in the garden in good order. Some gardeners recommend watering crops in dry weather, but I do not, as a rule. In planting all kinds of the Brassica family I prefer dipping the roots of the plants in what gardeners call a puddle, and I can thoroughly recommend it to those who do not practise it. The puddle is easily made by scooping out a little hole in the ground near where the planting is to be done, and filling it with water. Add a handful or two of soot, and stir the earth and it in the hole till it becomes as thick as cream. Dip the roots of the plants in this, and sufficient of the puddle will stick to them when planted to carry them on without further assistance till they are established, and, to use a gardening phrase, they will withstand severe drought, "and never look over their shoulder," not flag even in the driest and hottest weather. Besides puddling the plants (which I do in all seasons) when the weather is dry and hot, it is a good plan to draw drills before planting, and make the holes for the plants, and fill them with water from a garden watering pot, and in the operation run in sufficient of the fine dry soil from the surface to leave the hole full after the water has subsided. When the earth has settled sufficiently in the holes the plants may be put in and made firm, and in doing so no hole or sign of the dibble used in planting and making them firm should be left. I dislike greatly to see a hole by the side of a plant made by the dibble in pressing the soil firm against it. No one with any taste and an idea of the harm they are doing to the plant will leave an open hole by its side. Either of these methods of planting does away with any necessity for watering the plants afterwards. In my experience watering does very little good except in extreme cases. The more you water the more you may if it is once started, and it takes up a great deal of time to little purpose.

July is generally a very hot month, but we have mostly plenty of rainfall here during the whole of it. Sow early Cabbages about the end of the month to come into use in the spring, winter Spinach, Endive, Lettuces, and Turnips, and keep us a supply of small salading. The general work in the garden during July is weeding, thinning crops, and keeping them clean and free of weeds.

August.—Sow Lettuces for autumn and winter and spring crops; Onions, Turnips, and Cauliflowers to stand the winter in frames. Earth-up Celery, and lift and store away Shallots. The same routine of hoeing, weeding, and keeping crops clean as was done last month must be attended to. Remove all decayed leaves and stumps of Cabbage and Cauliflower that have been cut, which become unsightly if left in the ground.

September.—Plant Cabbage and Lettuce, to come in use in the spring; Harvest Beet, Carrots, Onions, and Garlic; earth-up Celery, and remove all decayed vegetation; and prepare for winter by cutting some of the best of the Cauliflower in case of frost, and store them away in a dark

cellar. If the stems are inserted in wet sand they will keep fresh and crisp for a long time. Prepare Seakale and Rhubarb for forcing. From this date on till the beginning of the year the principal work in the garden will be manuring and digging ground. By the end of the month or early in October cover up Asparagus beds with good manure, and protect Globe Artichokes and other plants from frost. Repair and keep walks clean and in good condition, and attend to a host of other little odds and ends, which make up a successful whole in the cultivation of the kitchen garden.

HARDY FRUIT AT EXHIBITIONS.

THE remarks in last week's *Journal of Horticulture* seem to call for an answer from us as large exhibitors of highly coloured Apples. You may be surprised to know that in the 600 fruits of Apples exhibited by us at the Crystal Palace in the champion class (first prize), only thirty-six fruits were from under glass; and in order to show how little weight these thirty-six had, we might mention that in several cases—Cox's Orange, Queen, Dutch Mignonne, to wit—three fruits were from the open, and three from under glass. As these dishes were duly matched, you may perhaps be convinced that our grand soil will turn out clean and coloured examples when carefully tended by our foreman, under whose care they are. We are quite content to show entirely from the open, and you will perhaps oblige us with space to refute the erroneous notion that we are deceivers of the public.—GEORGE BUNYARD & CO.

[We are not in the least "surprised" to learn that so few under-glass fruits were included in the collection indicated, and require no "convincing" that Kentish soil and climate will produce clean well-coloured fruit. Messrs. George Bunyard & Co. may therefore well be "content to show entirely from the open," and we are glad to find they give their adhesion to the proposed change, which the majority of nurserymen and amateurs desire to see adopted. After the very precise statement on page 325—namely, "No one for a moment suggests that the inclusion of glass-aided Apples and Pears in collections of hardy fruit is done with the intention of misleading visitors," the last observation of Messrs. George Bunyard & Co. appears somewhat remarkable, and not the less so since we further stated that "nothing of the kind (suggested) is intended by exhibitors." We thought those sentences were only capable of one interpretation, but our correspondents seem to have discovered another, and the public must judge between them.]

CULTURE OF CYCLAMENS.

[Abstract of a paper read by Mr. Walker at the Paxton Society's meeting, Rothwell, West Yorks.]

It is my object in the following short essay to state as clearly as possible my experience, with the object that it may be of benefit to my fellow gardeners and others who are interested in this beautiful plant. I am sorry to say that it is not cultivated so much in private places as it should be. I know from experience that it is not an easy plant to grow; on the contrary, for it requires strict attention from the seedling stage onwards. The system I adopt differs considerably from any I have seen described in the horticultural papers, and previous to my adoption of this I had no satisfactory results.

Success will greatly depend upon the time the seed is sown, and the proper time will be as soon as the seed is ripe—namely, July, August, and September, the two former months being the best. The seed may be sown as late as January, but the results would not be so satisfactory. Sow in pans in a compost of rough sandy loam and leaf mould, well draining the pans, and not filling them, adding half an inch in depth to the same mixture finely sifted on the top. Press firmly and water with a fine-rose pot, so that the whole is moistened; when dry enough the seeds may be sown on the surface and pressed in lightly instead of scattering soil over them. Place a piece of paper over the pan, also a square of glass, until the seeds germinate, then remove the paper, allowing the glass to remain. Shade from hot sun until they form roots, and when this is accomplished gradually bring them to the light. When the young plants are about an inch long they should be pricked out into pans or boxes in the same kind of compost as already recommended. Ventilation must be provided during the early part of the day, and they should also be slightly syringed two or three times daily.

When the weather becomes colder it will be necessary to remove them to a warm house, and, above all, place them as near the glass as possible; the temperature should be from 45° to 50°, where they may remain until the middle of April or the beginning of May. By that time it will be necessary to plant them out in a bed facing east, made of materials similar to a Cucumber bed, or any half-spent manure will do, for it is not necessary to have it hot. Cover the surface with a compost of loam and leaf mould to the depth of about 6 inches, made firm, so that when lifting time comes the plants will be taken up with a good

ball of roots. They may be planted in rows 6 inches apart, so that when they begin to get crowded every alternate row may be lifted and transplanted as stated above. It is necessary that each plant should have ample room, and at the same time take care that the corms be well out of the soil.

The reason they are placed in an eastern position is that in the early stage of growth, and after being slightly dewed with a syringe, the frame can be closed much earlier. It should be understood that they require shading during hot weather to prevent flagging, with slight ventilation late at night. By this treatment they commence flowering early, but it is necessary and safer to remove all the flowers until the plants are established. Green fly and red spider must be kept in check, or they will injure both leaves and flowers.

The treatment given may be continued until September, when lifting and potting will be necessary. This should be done with care using no larger pots than are absolutely necessary to get the roots into, as they do not make much root either before potting or after. Keep them well up in the pots to avoid water standing on the corms, for if allowed to be left in that state some will damp off. When potted place them in a close frame, keep them near the glass, shade from hot sun for a few days, frequently syringing, and on dewy nights the lights can be drawn off. When they are established in these pots the lights are drawn off in bright sunny weather and the plants syringed several times a day, and by so doing they never flag. Close the frames about three o'clock in the afternoon, and open them about six or seven o'clock, according to the weather. By this time the plants will commence throwing up a few flowers, which will be found useful. As the weather becomes too cold for them to remain in the frame remove them to any suitable house at command with a temperature of from 45° to 50°. Avoid a damp atmosphere; plenty of air must be admitted when the weather permits, and a little fire heat can be given with care. The leaves and flower stems are liable to damp near the corms, and when such is the case a little sulphur placed upon the affected parts will prevent its progress. When the flowers are wanted for use they should be pulled out, not cut, as the pieces left (if cut) decay and affect those remaining. I have large plants grown in this way, which commence flowering early in November and continue until May. I also find that the early sown plants flower longer and later, producing more and better flowers.

A word respecting the old corms. I find from experience that they are not worth the trouble of growing, for they come into bloom so late and they are not nearly so productive as young ones. Too much cannot be said in praise of the Cyclamen as a decorative plant; it has a fine appearance when grown well, the flowers are conspicuous, and the foliage beautiful.—R. KIRBY, *Oulton Hall*.

HONOURS IN HORTICULTURE.

I HAVE read with much interest the letter of Mr. Wright in your issue of the 10th, and I agree with all that he says concerning the R.H.S.

The ambition of the Council is to make the Society a representative National Society for the whole of England, but in my opinion they will never succeed in this until they determine to cultivate more assiduously the affections of all sorts and conditions of horticulturists. In their fortnightly shows, in reviving the Journal, and in their gratuitous distributions of seeds and plants, they have done much to make the Society attractive; but in their distribution of honours, at their general meetings, and in the composition of the Council, they show to my mind that the wealthy amateur with miles of glass and armies of gardeners, and the leading nurserymen, are the two classes of supporters they mainly affect. They do not seem to realise that the vast majority of horticulturists is not to be found in either of those two classes.

I have been an amateur horticulturist all my life, and became a F.R.H.S. in consequence of the appeal of the Council in 1887, and last year I was induced to become an exhibitor in a small way at its Temple Show. I received every attention, assistance, and courtesy from the Superintendent and his able assistants; but I was most effectually suppressed and my exhibit driven into an obscure corner by the enterprising nurserymen by whom I was surrounded. The official card describing my exhibit was removed by someone each day, and it seemed evident to me that I was regarded as an intruder not to be encouraged. It will be long, therefore, before I again exhibit at any show of the R.H.S., especially as I myself agree that I was an intruder, and that the shows, as now conducted, are designed for the wealthy amateurs and leading nurserymen, and not for the more humble amateurs, who nevertheless have done much service to horticulture, and without whose custom many nurserymen would find it difficult to exist.

I have urged these views both by letter and by speech at the last general meeting of the Society, but without much apparent effect; but if you open your columns to a discussion on the subject it may possibly

aid towards enlarging and improving the R.H.S. and placing it in the position in which, as I have said, it is the laudable ambition of the Council to place it.—FRANK R. PARKER, *Kynaston Lodge, Harrow Weald*.

[We insert this letter, though we know it is impossible for exhibitors to choose and retain positions at a crowded show.]



At a general meeting of the ROYAL HORTICULTURAL SOCIETY, held October 22nd, in the Drill Hall of the London Scottish R.V., James Street, Westminster, T. Francis Rivers, Esq., in the chair, the following candidates were duly elected Fellows—viz., Rev. Charles G. Auderson, Walter F. H. Blandford, B.A., Mrs. Brice, James E. Burrell, John Chivers, Mrs. Christie, Mrs. R. Codd, George Evans, Hugh Goodman Roberts, George Taber.

— CHISWICK GARDENERS' ASSOCIATION.—We are desired to insert the following reminder:—"A concert will be given under the auspices of this Association in aid of the Gardeners' Orphan Fund, on Thursday, 31st inst., in the Vestry Hall, Chiswick. Those readers who happen to be in the neighbourhood on the date mentioned may feel inclined to support this worthy project. Tickets of admission, 1s. (reserved and numbered seats, 2s. 6d.), may be obtained by applying to Mr. J. Barry, R.H.S. Gardens, Chiswick."

— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are requested to announce that the annual card collection for this year will close on the 31st inst., and the Secretary will be glad to receive any outstanding cards on or before that date. We are pleased to learn that the collecting cards have this year brought in a clear net sum of about £980.

— ON the evening of Wednesday, the 16th inst., MR. HARRY J. VEITCH of the Royal Exotic Nurseries, Chelsea, was entertained at a complimentary dinner at the Grand Hotel, Trafalgar Square, the chair being occupied by Baron H. Schröder. About sixty gentlemen were present, including Rev. W. Wilks, Mr. T. B. Haywood, Mr. Philip Crowley, Dr. Hogg, Mr. Shirley Hibberd, Mr. George Deal, Mr. Bunyard, &c., &c.

— VEITCH MEMORIAL MEDALS AT THE EDINBURGH SHOW.—I was surprised that the Royal Caledonian Society did not make more of these at their recent Show. Two of them were awarded, but there was nothing on the exhibits to indicate to the public the importance of the competition. I saw a reporter on an Edinburgh daily paper attach himself to Mr. H. J. Veitch, seek for information, and he appeared inclined to congratulate Mr. Veitch on his liberality, until that gentleman explained he had no personal interest in the prizes; but in my opinion it would only have been an act of courtesy on the part of the Council to have provided two special cards, containing some intimation of the original and present position of the Memorial awards.—PRACTITIONER.

— THE BLACK HAMBURGH GRAPE.—From his peculiar note, page 338, it is not clear what "Fifeshire" requires of me; but since he mentions my name, let me assure him he need not count on my support if he is going to attempt to prove that the Black Hamburgh is as well grown now as it was twenty years ago. The quantity seen, and the prominence given, to purely midwinter Grapes in all shows and markets, from midsummer onwards, induces me to join conscientiously with "A Kitchen Gardener" in his laudatory remarks in discovering an exceptionally fine crop of this most meritorious Grape, as well as in his lamentations over the undoubted decrease in popularity of the old Black Hamburgh.—J. MUIR.

— NICOTIANA AFFINIS AND N. LONGIFLORA.—They are not the same. *Nicotiana longiflora* is a much better flower than *N. affinis*, being purer white, with a smaller tube. The flowers close up but very little in the daytime, and are very fragrant. I grew and exhibited *N. longiflora* about seven years ago, and it was very much admired. I subsequently lost it, and have not been able to secure it since, although I have tried to get it from several seedsmen; but this autumn, while

paying a visit to the old village of Woodbridge in Suffolk, I saw it in several of the cottage windows. I have been given to understand it was introduced some years ago by Mr. Thompson of Ipswich.—C. HOLDER, *Reading*.

— GARDENING APPOINTMENT.—Mr. W. J. Holden informs us that he has been appointed head gardener to C. A. D. Halford, Esq., West Lodge Gardens, East Bergholt, Suffolk, post town Colchester.

— A CORRESPONDENT ("J. L.") desires to know which is the BEST PINK GERANIUM (*Zonal Pelargonium*) FOR BEDDING. As this is very much a question of taste, not uninfluenced by local circumstances, we leave the matter open to those flower gardeners who may be disposed to do so to communicate their experience. Our correspondent mentions Mrs. Turner approvingly, but has been informed it has been excelled by another, the name of which we cannot decipher.

— YOUR correspondent "A. C.," page 327, speaks of "the solid stiffness of that best of travellers the STAR OF WALTHAM" Rose. I once carried a half-expanded bud of this Rose in my travelling portmanteau over 1000 miles, taking it out and putting the stalk in water every night for four nights. On the fifth day, although then expanded, it would bear looking at.—WM. PAUL, *Waltham Cross*.

— AT the meeting of the LINNEAN SOCIETY OF NEW SOUTH WALES on August 20th Mr. J. H. Maiden read an interesting paper on *Spinifex resin*. The resin examined was a sample obtained by Mr. W. Froggatt near Derby, North-west Australia, last year, and presented by Sir William Macleay to Mr. Maiden. It is in flat cakes, about 3 inches in diameter, has a dirty bronze-green appearance, and a persistent disagreeable odour not easily described. It consists of vegetable *débris* (which may prove to belong to grass) cemented with a yellowish-brown resin, and containing about 3 per cent. of fat. Mr. Froggatt states that it is employed by the natives as a cement for spear-heads, &c.; and the consistent testimony of the natives, as well as of the Europeans, is that it is obtained from the roots of *Spinifex Grass* (*Triodia irritans*, *P. Br.*). As far as the author knows the extraction of resin from a grass has never previously been recorded. The resin isolated bears no resemblance to any other Australian resin known to the author.—(*Nature*.)

— IN his last report to the Foreign Office on the AGRICULTURAL CONDITION OF COLOMBIA the British Consul at Bogota says that the Potato is the chief food of the people of the cold part of that country. Two principal varieties are known—namely, the Criollas, which are red-skinned and orange-coloured inside, and the ordinary white Potatoes. In 1865 the Potato disease, which was unknown till that year, attacked the crops, and they have decreased very much in quantity since then. It is worthy of remark that the greater the altitude at which Potatoes are planted (they are sometimes planted at a height of above 9000 feet on the mountains) the less tendency is there for the disease to break out, and at the greatest altitudes the disease is almost, if not quite, unknown. With regard to the Cinchona industry the Consul reports that in 1884 the Government of the Republic passed a law for the purpose of promoting the plantation of Cinchona, India-rubber, and Eucalyptus trees, and the President was authorised to award valuable prizes to the most successful growers of Cinchona trees. The trees to be planted were to be of four species, *C. Ledgeriana*, *C. officinalis*, *C. lancifolia*, and *C. pitayensis*, but, though the distribution of trees was free, the law has remained a dead letter; no new plantations have been made under its provisions.

— PROPOSED TESTIMONIAL TO MR. W. DEAN.—The following circular has been issued:—"It has been thought by many horticultural friends that Mr. W. Dean (late of the Mill Hill Nurseries, Solihull, Birmingham) having spent nearly fifty years of his life in useful horticultural work, and is now in declining health, that a fitting time has arrived for recognising the valuable services he has rendered to horticulture, notably amongst these being the founding of the National Floricultural Society, which for a time did much valuable work amongst florists' and other flowers, ultimately merging into the Floral Committee of the Royal Horticultural Society. He was one of the 110 Judges at the Great National Exhibition held in London in 1866, in addition to which he has for many years acted as judge at flower shows at York, Dublin, Edinburgh, London, Newcastle-on-Tyne, Shrewsbury, and many other places. He was the first to introduce the Fancy Pansy to this country, which is now one of the most popular flowers of our gardens, and was at one time joint Editor of 'Gossip of the Garden' and Editor of 'The Florist Guide,' in addition to which he has been a frequent contributor to other gardening periodicals for more than thirty

years. These, and other services too numerous to mention, have contributed so materially to the advancement of horticulture that we, the undersigned, think it most desirable that his friends should have an opportunity of showing their appreciation of such valuable services. Contributions will therefore be most thankfully received and acknowledged by any one of the undersigned:—W. B. Latham, Curator, Botanical Gardens, Edgbaston, Birmingham; Walter Jones, Stephenson Chambers, New Street, Birmingham; W. Spinks, The Nurseries, Solihull, Birmingham; R. Johnson, Springfield, Drury Lane, Solihull, Birmingham; James Bubb, High Street, Solihull; and J. Hughes, Northwood Villas, Mitchley Lane, Harborne, Birmingham, Secretary *pro tem*. Contributions will be received up to November 1st, when the list will be closed, and the amount duly announced."

SHORTIA GALACIFOLIA.

ON page 273 of this Journal, April 4th, 1889, we find an illustration and description of the above-named plant, and in the October number of the "Botanical Magazine" a coloured illustration appears together with the following particulars by Sir J. D. Hooker:—

One of the most interesting of North American plants is on account of its history, its great rarity, and of the geographical distribution of the genus to which it belongs, which consists of only two species, the present and an almost undistinguishable congener, a native in Japan. *Shortia* is thus one of the most striking proofs of that kinship of the floras of Eastern Temperate Asia and Eastern North America, to the exclusion of Western America, through the study of which Asa Gray has thrown so much light on the past history of the vegetation of the northern hemisphere.

The following history of *Shortia galacifolia* is from the pen of Professor Sargent, as published in the "Garden and Forest." "The great interest of *Shortia* is found in the history of this plant during the past century, and in the fact that of all the plants studied and described and classified by Asa Gray, this little herb most excited his interest. . . . Professor Gray was in Europe in 1839, and when examining the herbarium of the elder Michaux, preserved in the museum at Paris, he found an unnamed specimen of a plant, with the habit of a *Pyrola* and the foliage of *Galax*, of which only the leaves and a single fruit were preserved, and which had been collected, the label stated, in the Hautes Montagnes de Caroline. This specimen at once arrested his attention, and after his return two years later from his first botanical journey in the Carolina Mountains, where he had searched in vain for Michaux's plant, he ventured to describe it, and to point out its probable affinities, dedicating it to Dr. C. W. Short, the author of a catalogue of the plants of Kentucky."

"Nothing more was seen of *Shortia* for a long time, although no botanists ever visited the mountains of Carolina, and the number in 1866 was considerable, without carrying a special commission from Cambridge to bring back a specimen of Michaux's little plant, in which Dr. Gray's interest became stronger than ever, when, studying in 1858 a collection of Maximovicz's Japan plants, he recognised in that botanist's *Schizocodon uniflorus* another species of *Shortia*, also identical with the Carolina plant. These specimens, while they confirmed the validity of the genus, threw no further light on the Carolina plant, which botanists now hunted for more assiduously than ever in all the region in which Michaux was supposed to have travelled."

In fine, "the search was given up as almost hopeless, when in May, 1887, *Shortia* was found accidentally by a youth upon the banks of the Catawba river, near the town of Marion, in McDowell county, N. Carolina, at a considerable distance from the high mountains to which Michaux's label assigned the plant."

Professor Sargent then proceeds to give an account of his own re-discovery of *Shortia* in Michaux's original habitat, to which he was led for the purpose of gaining some insight into the origin of Michaux's *Magnolia cordata*. It was during a journey of Michaux's to get roots of this latter plant that he visited the head waters of the Keowee, and though weakened by sickness and hunger he proceeded to explore the mountains. On the day of his arrival he discovered what he called a *nouvel arbuste a. f. dentelés rampant sur la Montagne*. Reading Michaux's MSS. Journal, preserved in the Library of the American Philosophical Society, this note of Michaux's interested Professor Sargent, and he determined to hunt for the arbuste as well as for the *Magnolia*, little suspecting what the former would prove to be. After finding the spot where Michaux had camped in December, 1788, and following a path that the old traveller must have traversed just 100 years before, he discovered the arbuste with denticulate leaves, and this to be no other than *Shortia galacifolia*.

Soon after the re-discovery of *Shortia* by Mr. Hyam, it was widely distributed in America; for, as Professor Sargent tells us, "that enterprising young man reaped a rich harvest during a year or two by selling plants (and it is to be feared by exterminating them) at extravagant prices. The credit of flowering it for the first time in England is due to our indefatigable correspondent, Mr. Elwes, who received plants of it from Professor Sargent, and to whom the Royal Gardens are indebted for that here figured, which was exhibited at the Royal Horticultural Society's Exhibition in the spring of this year. Plants of it have also flowered at Kew, received from Mr. F. L. Temple of Shady Hill Nurseries, Cambridge, U.S.A."

As an object of garden culture *Shortia* will no doubt prove a favourite, for it appears to be easily grown and readily propagated. A specimen kindly given to me by Mr. Elwes early in this year was planted under a clump of Scotch Firs in a peaty soil near Sunningdale, and has thriven luxuriantly side by side with *Linnæa borealis* and *Trientalis europæa*. The flowers have been described as rose coloured, but they are correctly figured as pure white in Sprague and Goodale's "Wild Flowers of North America," and so they are in the specimens that have flowered in England. The leaves turn a deep port-wine red in autumn, and nothing can exceed the charm of the abundant drooping Snowdrop like flowers on red scapes as they appear amongst the deep green shining spring foliage.

COLLECTIONS OF VEGETABLES.

At the early autumn shows of horticultural societies collections of vegetables usually constitute an important feature, and when tastefully

effected, and not more than four dishes (distinct) of any sort. The following varieties were shown by Mr. Beckett, who displayed them admirably, contrasting the colours in quite an artistic manner:—Drumhead Savoy, Brussels Sprouts, Standard Bearer Celery, Golden Globe and White Spa nish Onions, Summer Favourite and Scarlet Perfection Carrots, Perfection Tomatoes, Anticipation Peas, Magnum Bonum Potatoes, Champion Runner Beans, Jersey Lily Turnip, Perfection Beet, Maltese Parsnips, Mushroom spawn, Trophy and Abundance Tomatoes, pickling Cabbage (red), Little Gem ditto (white), Scarlet Runner Bean, Canadian Wonder ditto; Autumn Mammoth, Favourite, and Magnum Bonum Cauliflowers; Blood Red and Excelsior Beet; Exhibition, The Aigburth, and Matchless Sprouts; Sulham Prize and Superb Pink Celery; New Red Intermediate and Long Red Surrey Carrots; Telegraph, Tender and True, Model and Telegraph Cucumbers; Golden Dawn, Read Giant, and Long Red Capsicum; Exeter Fine Green Curled and White

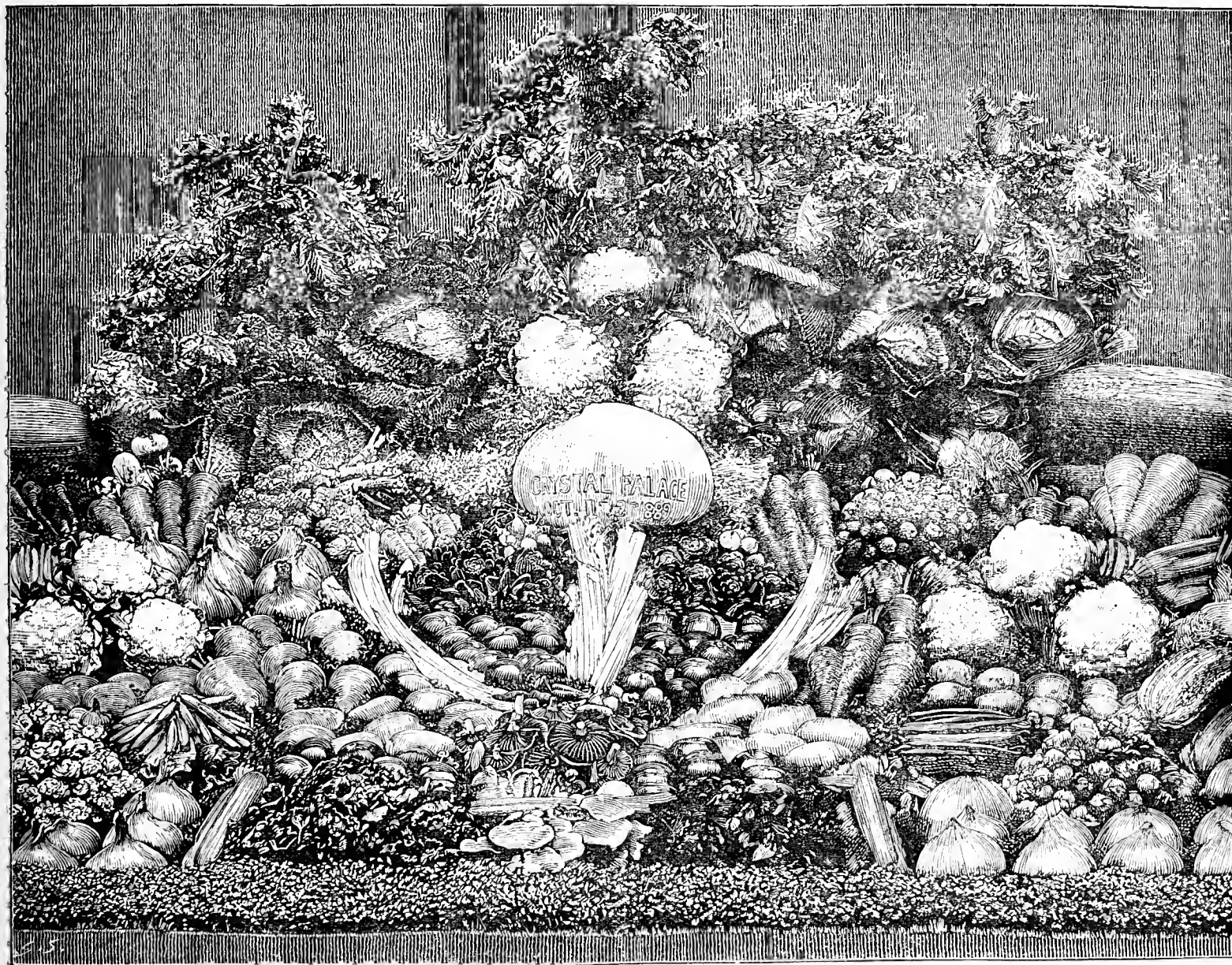


FIG. 43.—A PRIZE COLLECTION OF VEGETABLES.

arranged, as the best exhibitors invariably display them, they produce quite a pleasing and varied effect. At the Crystal Palace Show recently several classes were appropriated to vegetables, and the keen competition brought out some admirable specimens of kitchen garden produce, as well as giving the exhibitors a chance of displaying their taste and skill in arrangement. One of the best of these in all respects was that for which Mr. T. A. Beckett, Cole Hatch Farm, Amersham, was awarded a first prize, and so effective was this collection that we have had an engraving (fig. 43) prepared from a photograph supplied by Messrs. Negretti & Zambra to represent its chief characters. It has been necessary, however, to somewhat reduce the sides to admit it into our pages, consequently the corner examples of Parsnips, Turnips, and Celery are not seen.

The class was for the best exhibition of vegetables arranged for

Batavian Endive; Mammoth White Cos, White Heart, Tom Thumb Cabbage, and Marvel Cabbage Lettuces; Improved Reading and Ailsa Craig Onions; Prizetaker, Musselburgh, and The Lyon Leeks; Long Crimson, Olive Crimson, Scarlet Globe, and White Olive Radishes; Snowball and Six Weeks Turnips; Long White, Improved Green Bush, Moore's Cream, and Long Green Marrows; Cardoons; Green Globe and Jerusalem Artichokes; Mammoth Gourd, Longstanding Spinach, Giant Salsafy, Parsnip Student; Mustard and Cress; Parsley; Seedlings, Vicar of Laleham, and Beauty of Hebron Potatoes; and Giant Shallots.

RATS IN GARDENS.

IN reply to "L. K.," I may say that if a rat comes on my premises I consider it a very cunning one to live many days without putting its

foot into a trap. To just set a trap or two in the open, uncovered, is very seldom successful, but to set a trap to catch a rat one must use a little stratagem. Rats, when they settle down to a place, soon make visible runs, and are very wary about using new and uncertain ground. In the first place traps must be in good condition, so that they will go off at a slight touch on the treadle. To ascertain this, set it, and see if the catch is in the right form, very slightly bevelled outward. The strength, or weight, required to let it off may be ascertained by trying it with the thumb underneath the jaws. If it goes off hard, a rat's weight will not let it off, and it must be slightly filed and greased. Notice the most used runs, and take out sufficient ground to let the trap into the earth on a level with the run, and make up as natural-looking as possible by placing fine earth gently, and by degrees, on the treadle, and between the jaws and the treadle; at the same time see that sufficient does not work or run under the treadle to take a bearing to prevent going off. In buildings it is just as requisite to use deception to insure success. A little bran or chaff, or the soil scratched out in burrowing, is used to cover the traps and make up on a level with the surroundings. If a rat accidentally lets the trap off without getting caught, set the trap in a fresh position, as they are very wary of a second attempt.—J. HAM.

GRAPE GROWING FOR PROFIT.

THE RED ROSE VINERIES, CHESTER-LE-STREET.

IN the counties of Northumberland and Durham there is no name better known amongst horticulturists than that of Mr. Joseph Witherspoon. Primarily he is a Grape grower, and a remarkably successful one, but there are other fields of action in which his influence has been felt. Wheelwright, political economist, editor, engineer, florist, and Grape grower, Mr. Witherspoon's life has been one of more than usual variety and interest. Chester-le-Street, where the Red Rose Vineries are situated, is a quiet little town in Durham, and within a few miles of the county town, famous, a native informed me, for two things, mustard and old maids. There is a good service of trains from Newcastle-on-Tyne, southward bound, and the town once reached all else is plain sailing, for vineries and Vine grower are equally familiar to everyone. I have referred to Mr. Witherspoon's many-sided career. It is a curious fact that in the same town whence come his now famous market Grapes he commenced business life as a working wheelwright many years ago. Not only so, but a large portion of his youth and manhood were devoted to this calling. An inherent love of horticultural pursuits had, however, been growing. By-and-by it took tangible form. The first step was flowers, the second fruit, the third the final abandonment of plane and chisel in order to earn a livelihood by marketing Grapes. No doubt there were early disappointments, perhaps partial failures, but sturdy perseverance triumphed. There can be no doubt of the absorbing interest of Grape growing, and one has only to glance at the space required for dealing with the doubts and difficulties of Grape growers in the correspondence columns of this and other journals to appreciate its importance. Mr. Witherspoon proceeded step by step, acquiring experience, and digesting it thoroughly, and I believe he is satisfied, now that the third score year of his life has passed, that he is on the right path, and after seeing splendid examples of his fruit in the great fruiterers' shops at Newcastle, and long ranges of glass, bearing wonderful crops at the Chester-le-Street vineries, he would be a bold man who would declare the veteran wrong.

The first feeling of surprise is awakened on entering a house some 150 feet long to find fine crops of Black Hamburgh, Black Alicante, Gros Colman, and Gros Guillaume (miscalled Black Barbarossa) growing side by side. A few of the first named are grown, about double as many Alicantes, and about six times the number of Gros Colman. This Grape is Mr. Witherspoon's sheet anchor. He sends thousands of bunches into the market, excellent in form and colour, and thinned to perfection. No one can be surprised that the great fruit-buying public are attracted by Gros Colman more than by any other Grape when bunches are put before them perfect in symmetry, enormous in the size of the berries, and finely coloured. Gros Colman is not only the first of all market Grapes from its commanding appearance when well grown, but it comes in when the glut of Hamburgs and Alicantes is past. Hundreds of pounds are realised by the sales of this variety alone. A constant demand and the highest prices are sufficient evidence of their adaptability to market wants.

Some remarks will naturally be looked for bearing on the mode of treatment Mr. Witherspoon pursues to secure such results; as anyone may see who visits him. Perhaps he would not thank me for describing every detail of management, but there are some general principles which may be referred to. His good advice to those starting in Vine culture is—"Treat your Vines as you would a young horse that you wish to do your work twenty years hence." Overcropping Vines and overworking horses are common evils. Mr. Witherspoon fell into the former, but the lesson learned he has never forgotten. Our friend's precepts are good, his practice still better. "Sufficient without gorging" is one of the former, which he never wearies of emphasising. Healthy root-action, which means vigorous growth and fruit of the highest flavour, depends upon it. Overfeeding is waste of material, waste of labour, and waste of profit. He has a firm belief in mulching; none whatever in repeated waterings. The inside borders of the vineries whence thousands of bunches of Grapes are taken to realise the highest prices in the markets, are so dry as to cake and fly into dust if the foot

is applied to the soil. If the visitor thinks this is going to extremes he is advised to raise his head and see if the splendid clusters above speak of ill treatment or the reverse. Mulchings of cow manure are firmly believed in. Beneath cow droppings on the driest pasture moisture is always found, with sufficient sweetness for the roots to retain health; and so the manure is applied to the Vine borders at the same thickness as it is found in the fields. Horse manure is employed on the same principle, and fowl manure is used like guano. It is contended that if these quantities are doubled sour borders result, and of these the evils are many and serious. New borders are now all composed of turf, lime rubbish, and plenty of stones, especially if on a dry bottom, on the ground that no matter how dry the season may be a stone is damp and so affords moisture totally devoid of impurities. The practice at the Red Rose Vineries is to water in winter until the border is thoroughly moistened, and then to keep the mulching damp during the growing period.

Previous to thinning all shoulders are removed, and then sufficient bunches are taken off to leave what is considered to be a fair crop. Then comes the thinning, and great as the task must be in a Grape-growing establishment like this, every bunch is thinned to perfection. Sometimes a little miscalculation leads to a heavier crop than is considered desirable. For instance, five bunches of Gros Maroc intended for showing were left on a 12-foot cane last year with the expectation that they would not average more than 3 lbs. each; instead they averaged nearly 4½ lbs., or a total weight of over 20 lbs., and the result was that they did not colour so well as they would have done had the bunches been of the anticipated weight.

The Vines are restricted to single rods, and the wood is thoroughly ripened. Splendid bunches may be seen hanging close to the ground, and these are usually the best coloured. No space is wasted in these houses; besides the roof Vines there are other canes trained along the side of the path like Raspberries to a rail, bearing good bunches, if not good enough for market. With one exception there are both inside and outside borders, the latter being all raised and left uneropped. Mr. Witherspoon calls his the "warm sweet border system," and has both preached and practised it for many years. The exception referred to is a new house planted this spring, and owing to a cart road running along the front an outside border had to be dispensed with. In this house a few Vines of Duke of Buccleuch and Madresfield Court have been planted. The former is managed well, but although cracking is not feared it is considered that these varieties should have a special house if possible. In order to make the house pay its way until the Vines reach a profitable stage it has been planted with Tomatoes, and £60 has been realised by their sale. They will be grown again next year; then the turn of the Grapes will come.

Though the Grapes are chiefly grown for market purposes it is not uncommon to find their grower competing at the northern shows, and holding his own. He is also the patentee of the excellent Red Rose boiler, which, I believe, is about to be made more widely known by a newly formed company.

The general lessons to be learned from an inspection of this establishment are well worth considering. In the first place we are shown that the highest possible results are achievable in Vine culture when close attention, untiring energy, and ceaseless perseverance, directed by common sense, are brought to bear in the absence of formal schooling. Mr. Witherspoon could not be spoken of as an amateur now, but he commenced as such, and taught himself what most of his contemporaries learned in their youth from the various masters under whom they served. Were Mr. Joseph Witherspoon, or any other great grower, asked to point out to the beginner the path of success, he would impress upon him that the first essentials were planting healthy Vines in a fresh, wholesome, well-drained soil; the second, keeping them in health by ample, but not excessive, supplies of food; the third, to avoid shanked, unripe, stoneless, or otherwise imperfect fruit by judicious cropping; the fourth, to insure perfect ripening and subsequent abundant crops by a thin disposal of the foliage. These are looked upon as points of paramount importance at the Red Rose Vineries. Heavy crops are secured, at least more than an ordinary weight of fruit, from a given area, but the rods are not overloaded; they are grown somewhat more closely together than in most establishments. The drain upon the root medium is, of course, proportionately great, but the "warm sweet border" system has never yet failed.—W. P. WRIGHT.

BULLFINCHES.

A TIMELY HINT.

I THINK it is about ten years since I gave some particulars in the Journal respecting catching and keeping these birds. I would remind fruit growers that the time of year has arrived when these birds are very easily caught in trap-cages instead of shooting them later on. I have taken eleven out of a trap-cage in my garden within the last week, and I expect to take scores between now and Christmas, after which it is difficult to get one into a trap. Within the past ten years I have trapped hundreds. They vary much in number in different seasons. I fancy we have an influx with our winter migratory birds, as I have noticed many during the past few days flying very high, and they may be fetched down from a height of 100 yards by imitating their well known call note. Last season I only caught twenty-three; in the autumn of 1887 I took sixty within a few yards of the house door. I

made 2s. 6d. each of the cocks in spring, which paid better than wasting powder and shot and spoiling fruit trees by shooting into them.—J. HIAM.



CHRYSANTHEMUMS IN HAMPSHIRE.

DURING the past few years the establishment of Messrs. W. & G. Drover at Fareham has become well known for the cultivation of Chrysanthemums for exhibition. Yet it cannot be said that their conveniences are of the best kind for the summer growth and autumn flowering of the plants. The space for the former is limited, and for the latter use is made of Rose and other houses, wherein numerous other plants are grown during the summer to meet the cut flower demand. Last year the members of this firm succeeded in carrying off the handsome silver claret jug value £25 and a cash prize of £6 given by the Portsmouth Chrysanthemum Society with a splendid stand of blooms. This prize they have to win again, which will be their main object this year. Judging from the appearance of their 600 plants at the present time they will, to use exhibition phraseology, be hard to beat. The growth this season is tall, especially in the "Queen" family and Princess of Wales. It is to the latter only the exception can be taken on account perhaps of "softness." The plants are strong, well furnished with leaves and buds, which are opening "kindly" and devoid of coarseness. The present bright weather will do much toward bringing on the late plants, which will need all the time available to insure perfect development by the required dates. The varieties most promising at the present time are Boule d'Or, Golden Dragon, very fine; Ralph Brocklebank, Jeanne Délaux, always good here; M. W. Holmes, M. Freeman, Avalanche, very early; Novelty, most promising; Refulgence, Jardin des Plantes, rich; Lord Alcester, and John Salter. Several new French raised varieties are on trial, which by their present appearance do not promise anything extraordinary.

ROOKSBURY PARK.

In the Chrysanthemum world this is a new name, but the name of the cultivator there is not new, for he is a younger brother of Mr. Molyneux of Swanmore Park, who is looking forward, no doubt anxiously, to making his *début* as an exhibitor on his own account; and as he has had much experience in this when at Swanmore, where he served as foreman six years, the "business" will not be entirely new to him. Circumstances at present do not admit of his growing a large number of plants, neither is the convenience for housing the plants quite of the best. Most of the plants are standing in a large and lofty conservatory adjoining the mansion. In this position they are far from the glass. The roof is 30 feet high, although through the side they obtain ample light. The plants are arranged in a sloping bank 100 feet long, and being backed up with specimens of Camellias nearly 20 feet high and other plants which reach the roof, an excellent effect is produced by the glowing colours against the dark green background. One thing which specially struck me was the intensity of the colours. Princess Beatrice, for instance, was a true rose pink, not that washed-out lilac tint so often seen. The plants are not so much characterised by a great thickness of stems as they are by their complete maturation. This and a hilly situation may have much to do with the intensity of the colours. Many varieties are now expanding their blooms, and are evidently well "timed." Especially good was the promise of blooms of such varieties as Prince Alfred and its sport Lord Wolsley, which are already deeply built, an essential point of quality. Novelty, capital; Refulgens, fine; Princess of Wales and Mrs. Heale, very good; Lady Hardinge, Mrs. W. Shipman, and Jardin des Plantes were conspicuous amongst the incurved varieties. Japanese were represented by large expanding blooms of Frederick Marrouch, a deep orange yellow, capital for back lines; Belle Paule, equally good; Baronne de Prailley, Sunflower, Ralph Brocklebank, substantial blooms of Avalanche gradually developing, and later ones of Edwin Molyneux and M. Astorg, the latter a silvery white, in which the florets have an elegant drooping character. Taken as a whole the prospect is encouraging, although Mr. N. Molyneux is anxious to see how the blooms will develop in such roomy and lofty quarters.

SWANMORE PARK.

A note respecting the prospect of the Chrysanthemum season in Hants would hardly be complete without a mention of the Swanmore plants. Mr. Molyneux, by the publication of his book, has done much in extending the growth of Chrysanthemums for the production of large blooms, and although he is not such a prominent exhibitor he is still a large grower, turning his attention to bringing out the latent qualities of new varieties. For example, the finest of all the white varieties of the Japanese section, Avalanche, first expanded there in its proper form two years since. Last year brought out another sterling novelty, Mrs. Falconer Jameson, this, like the former, being one of Mr. Cannell's seedlings. This season proves the variety to be one of the best of its colour and kind in existence, coupled with dwarf growth, 3 feet high. The

blooms measure 7 inches across, 5 inches deep, perfectly solid in build; the florets are strap shaped, and have a semi-weeping character; the colour is a peculiar mixture of chestnut, bronze, and yellow, the reverse is pale gold. This year several American varieties promise well, Puritan, a pure white incurved Japanese, being worthy of especial notice. So is Sokoto, a new style of yellow. M. Bernard, a dwarf growing variety, has amaranth surface florets, having a silvery reverse. Middle Louise Leroy has the same style of flower as Avalanche in its formation, but having the faintest touch of blush pink on a white ground. Many other new varieties, both named and otherwise, are under trial, including several English raised sports from incurved varieties which need more time to determine their quality. All sections have an equal chance, one not being neglected at the expense of the others. Mr. Molyneux has an especial fancy for single varieties and Pompons, of which there is a capital collection now commencing to unfold their blooms. Bush grown plants covered with bloom of Lady Selborne evidently find favour. The plants are arranged in the usual "bank" style, so that a capital view can be obtained of the blooms all through.

I noticed the extreme dwarfness of the plants generally, plenty of the Queen type not being more than 4 to 5 feet high, the Tecks 3 to 4 feet high; the foliage is of that bronze hue generally noticeable in the Swanmore plants, while due regard is paid to the maturation of the wood, in which Mr. Molyneux is a stern believer. As showing the manner in which such varieties as Avalanche, for instance, is tested here, I noticed as many as forty blooms of this variety alone in one long row, and being arranged thinly among the Pompons the purity of this variety was much enhanced by its contrast with the deep green leaves of the small flowered varieties. The blooms were large and solid, but early. Edwin Molyneux is excellent; Sunflower is one of the best yellow varieties in existence, the drooping habit of its florets giving it a charming appearance; M. Astorg, Middle Lacroix and F. Marrouch are good; Thomas Stephenson, a sport from Criterion, was considered not to be distinct by the National Society's Committee from that variety, but is here totally different, being orange red. Violet Tomlin and Miss M. A. Haggas are developing blooms quite in keeping with the published descriptions of these grand additions to the incurved section. It is such varieties as these which have well formed blooms that add so much to the quality of a collection. In time it will not be necessary for cultivators to retain many sorts at present in favour, which are either rough or flat. Several new singles are under trial. These, as well as the Pompons, are being grown in two ways, some for producing specimen blooms, and others in quantity, which will prove the adaptability of these sections for producing bloom in both ways. Effie is a large flowering variety with long drooping florets of a peculiar mixture of chestnut and claret, the disc being pure yellow. Many other varieties were promising, but not at present far enough out to determine their quality. Older varieties, such as the Queen family, Princess of Wales, and Princess of Teck, Lady Hardinge, &c., promise good blooms later on.—VISITOR.

EARLY CHRYSANTHEMUMS.

THIS season has been one of great advance in many ways for the early flowering Chrysanthemums, although as far as regards the weather it has not been so favourable as some. The spring was good, we did not have so many or such late frosts as in other years, but August was unusually cold, not having the ripening influence so important to it. With all the progress that has been made, Mr. Wilks, the Secretary of the Royal Horticultural Society, truly says they are not nearly so well and generally known and valued as they should be.

The first striking event of the year was at the Rose Show, July 6th, at the Crystal Palace, when on entering the exhibition tent a row of Chrysanthemums in full bloom met the view. These were all of the Desgrange family, and consisted of forty-three fine plants, not with two or three flowers on a plant, but mostly bearing about a dozen good blooms, forming with other decorative plants a fine back row to the tables of Roses. They were exhibited and grown by Mr. W. E. Cass, Church Road, Norwood. Now it has been said that Chrysanthemums are not wanted at this time of the year, but I can truly say that there was no feature of that Show so striking or beautiful as this row of Chrysanthemums, and as a lady behind me remarked they looked better than the Roses. The day was very hot, and the Show being held in a tent with insufficient ventilation many of the Roses looked wilted and parched, but these plants and flowers seemed in their full beauty. It has been urged that they were of no use, but it should be remembered that they were not grown merely for exhibition but in the regular way of trade, were used after the show for furnishing purposes, and finally the flowers were cut and sold. Tolerably fair use for one set of plants being a sufficient reply to those who said they were no use, besides showing what can be done at so early a date as the beginning of July.

As regards the other Shows, the Dahlia Show at the Crystal Palace on September 6th and 7th was the place of struggle, for Messrs. Laing & Sons of Forest Hill, who, for the first time came in with a very large group, taking first prize, Messrs. Davis & Jones of Camberwell were second, and myself third. I think there should be some restriction in these exhibits. The schedule says, eighteen plants, three of a sort, six kinds, in 24-size pots; but this has hardly ever been adhered to. We have always tried to exhibit plants fulfilling the terms of the rule, but doing much more. In this case Messrs. Laing's group was nearly twice the size of Messrs. Davis & Jones's, so that, though the latter was very good, it had not the size to attract the attention of the Judges. What is

wanted to make the competition fairer is a restriction to the number of pots and sticks in them, say not more than forty or sixty pots with not more than three sticks in each, for if the sticks are not restricted as well as the pots we should have those flat monsters so common at the shows of the late sorts. Not less than six sorts would give latitude enough for show and the exhibition of new sorts. The latter at this Show were Madame la Comtesse Foucher de Careil, which obtained a certificate, and Grace Attick. I will not say more here about the first of these, as my own plants did not come early enough to form a fair estimate of them. I was able to show for the first time Golden Shah, Duchess of Fife, White Lady, Goldsmith, and Mr. Selly. Of the new sorts more further on.

At the Show at the Aquarium, Westminster, on September 11th and 12th, there was nothing so striking as last year. The groups were not so good as at the Crystal Palace. Messrs. Laing took first prize. Mr. J. R. Chard, Brunswick Nursery, Stoke Newington, London, was second. Mr. Stevens of Putney took third, and in his exhibit was a large lot of the new bronze sport of *Précocité* called Maud Pitcher. The only other remarkable exhibit I noticed were the blooms of Madame Desgrange exhibited by Mr. J. Blackburn, gardener to J. Scott, jun., Esq. of Elmstead Grange, Chislehurst, Kent. The petals of these flowers were so thick and stout that they looked like pieces of white kid, and were about the best I ever saw. Of course he had first prize.

The next notable incident of the season was the legal decision with regard to the claim to the name of the sport Mrs. Hawkins, which has already been referred to in this Journal. The first season the yellow sport of Madame Desgrange was made known I discovered about five other instances, and had five different names been given what confusion would have ensued. With regard to this new Mrs. Hawkins I may say that I have grown half a dozen plants, and the blooms were all darker than the old yellow one, *G. Wermig*, and this latter will be useless, for it is not nearly so good a yellow as the new one. So the three strains stand—Madame Desgrange, white; Mrs. Burrell, primrose; and Mrs. Hawkins, yellow, for I think no one will grow the old one if he can get the new.

The new sorts of this season are good and show a great advance. The first is the Golden Shah, a seedling of last year, from seed grown by me here the season before, and raised at Mr. Ware, Hale Farm Nurseries, Tottenham, London. It is the finest early yellow Pompon yet raised. It is early, thus a plant inserted as a cutting April 25th was in full bloom August 25th. Another plant from a cutting inserted May 4th was in full flower September 4th, eighteen weeks and three days. It grows from 18 inches to 2 feet high, is of slender habit with sparse foliage, forms an elegant plant, and flowers freely up to the middle and end of October by being struck late. The colour is a very deep bright yellow, and the flowers are $2\frac{1}{2}$ inches across, each borne on a fairly long stalk, making sprays for cutting of a most desirable form, as well as adding much to the gracefulness of the plant's appearance.

Duchess of Fife is another from the same batch of seed grown and raised as the above. It is a beautiful white Pompon. The flowers very much resemble Madame Marthe in the late ones, but it is early and dwarf, being only 13 inches high, a stout bushy plant. The flowers are $2\frac{1}{4}$ inches across, nearly globes, with short thick slightly incurved petals. It comes to perfection in a very short time, for a cutting inserted April 6th was in full bloom August 25th, and another inserted April 30th was in bloom September 4th. If I mistake not this will make a very popular small pot plant. It does well in a 48 or 32-size pot, and of course wants no stick. It is a real gem.

Mr. Selly is another dwarf seedling from my own seed grown here. It is a bluish white Pompon, very dwarf, a profuse bloomer, with the flowers all at the same level. A cutting put in on the 2nd of March was in full bloom on September 6th. It is a robust sort, only 21 inches high, with blooms $1\frac{1}{2}$ to 2 inches across, very flat in form.

Martimas, a new sort of French origin, of most robust habit. An excellent grower, and should it ever sport white will probably be one of the most generally grown for cut flower purposes, as it seems to grow more flowers than almost if not quite any other sort, and they come out nearly all at the same time, enabling the plants to be cleared at one cutting. It grows 3 feet high on stout wood, bearing flowers in masses of a pink colour $2\frac{1}{2}$ to 3 inches across, which are reflexed, and was in full bloom September 26th. It is a really useful sort either for decoration or cut flowers.

Capricine is a new French orange red Japanese sort, which blooms in October. It is very stout, requires no sticks, grows 30 inches high, with flowers 3 to $3\frac{1}{2}$ inches across, which come out at different levels, so that all can expand without disbudding.

October Beauty, imported from the United States, a useful outdoor sort, grows 28 inches high, stout enough to do without sticks, an excellent grower. Flowers pink mauve reflexed, 3 inches across.

Miss Lily Stevens is a beautiful little white Pompon with flowers over an inch across, the plant growing 2 feet high. Where a neat and unique small white flower is wanted this is one to fulfil the requirement. Blooms at the end of September.

William Cobbett is a salmon coloured Japanese. Good variety, 3 to 4 feet high, flowers 3 to $3\frac{1}{2}$ inches across, blooms in October.

In the French new ones sent over this spring as early we have been sadly deceived. I had fifteen of them, and up to this, 11th of October, only one has opened a flower—i.e., Madame la Comtesse Foucher de Careil they call a brilliant orange. It is a dwarf Japanese, rather a brighter colour than Capricine. It grows about 30 inches high, and the

flowers seem to grow about 2 to 3 inches across. It has obtained a certificate, but I should be sorry to pronounce a judgment on it till next season, as this has not been a good one here.

Grace Attick has proved itself to be the earliest of all Chrysanthemums, coming into bloom by the 1st of May, just a month earlier than our earliest one before—viz., Nanum. It has gained a certificate, as well it may, for it is a most exceptional plant, not only in its earliness but in its profuse and long continued flowering.

This season is marked by an increased appreciation of *O. J. Quinatus* as a producer of cut flowers, in which it has no rival for Japanese mauve blooms. It is an immense bearer of October flowers. It is a good after dark colour.

A Conference of the National Chrysanthemum Society on early flowering sorts was held at the Aquarium, Westminster, on the first day of the early Show, when papers were read by Mr. J. Doughty and myself to a well-attended meeting of appreciative members, and a very useful discussion followed.—W. PIERCY, 89, Beadnell Road, Forest Hill, London, S.E.

IPSWICH SHOW.

WE are requested to state that the Ipswich Chrysanthemum Show will take place on Tuesday and Wednesday, the 5th and 6th of November, instead of the 7th and 8th, and schedules can be obtained from the Hon. Secretary, the Rev. Hugh Berners, Harkstead Rectory, Ipswich.

RIPE GRAPES IN MARCH.

I AM pleased that my friend and late pupil, Mr. W. Palmer, has been so successful in the production of Grapes early in the season. My note is not intended as a criticism on what he has written on pages 306 and 307, but to congratulate him for stating clearly his practice for the guidance of others.

With regard to the eradication of red spider I observe that Mr. Palmer's recommendation to apply sulphur "to the pipes" is misprinted "to the roots," and the correction given was necessary to prevent any misapprehension arising on the subject. Red spider will in some cases disappear almost at once after the border has been thoroughly soaked with water, but this does not appear to be effective when the spider has been encouraged by other causes than dryness. I have tried many means, but taking the matter generally I have found nothing more effective than sponging the under side of the foliage directly the pest appears with sulphur and water in which a little softsoap has been dissolved. We invariably use a 3-inch potful in 3 gallons of water, and half an ounce of softsoap. This is the process when Grapes are hanging on the Vines. If they have been cleared off the Vines are thoroughly syringed with the same solution. The sulphur is allowed to remain on the Vines three or four days. The weather must be bright, after which the Vines are thoroughly washed with clean water. This is the readiest method I have been able to discover of destroying red spider either on plants that will bear full sunshine, Vines, Peaches, or Roses.

I do not believe in having the roots of Vines in a dry medium at any time. I have long been of opinion that considerable harm is often done by acting contrary to Nature in this respect. Vines, Peaches, Roses, and many other plants under glass during the period of rest are often too dry. The opposite is the case outside, and therefore I commend that part of the practice advocated by Mr. Palmer. The reason, however, for the early watering of the border to "induce root action before the Vines commence growing" is to me wide of the mark. Vine roots I am aware can be retained throughout the resting period in a perfectly fresh practically growing condition, but these are generally strong quill-like roots that eventually die back, and are much longer before they start again into growth than small fibres that have ripened thoroughly by the time the Vines are pruned. These fat roots can be induced to grow long before top growth is visible. This is brought about only by subjecting the roots to a higher temperature than that provided for the canes.

It is an open question whether root activity preceding growth is an advantage or the reverse to Vines. My experience has led me to the conclusion that it is unfavourable. It is an established fact that the Vine makes a considerable growth before its roots are called upon to furnish supplies. This being the case, root action preceding growth is not required, and only tends to upset, at least for the time being, the natural course the Vine would otherwise follow. It is simply reversing the natural order of things.

I can well understand the Vines breaking in the irregular manner they appear to have done. Hard forcing in nearly all cases induces the most unripened shoots to first break into growth. I have invariably found that Vines subject to uphill work rarely show fruit freely from the eyes to which they have been pruned. It can scarcely be expected, for they enjoy, comparatively speaking, a limited season of rest. A complete season of rest, however limited it may be, is essential to the health and vigour of the Vines. Very often when they are forced very early they have not completed the one season's work before they are forced again into growth. The system is an exhaustive one, and I should hesitate before subjecting a permanent vinery in good condition to such early forcing. My main reason is because such early forcing is unnecessary. Late Grapes can be had in excellent condition throughout March, April, and May, and I have kept them good until June. With the varieties Alicante, Lady Downe's, and Gros Colman, I fail to see why Vines need be forced to produce ripe Grapes before the first week in May or the middle of the month at the earliest.

I am aware that circumstances alter cases materially, and one is often obliged to practise systems that are not good for the well being of the Vines in order to attain certain results. Mr. Palmer's practice and the results he has attained are highly commendable, whatever may be the conditions that induce him to subject his Vines to such early forcing. —WM. BARDNEY.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 22ND.

THE space available for exhibits was fully occupied on Tuesday last at the above Society's Fruit, Floral, and Orchid Committees' meeting in the Drill Hall, James' Street, Westminster. At 3 P.M. Mr. W. Wildsmith delivered an instructive lecture on Pears and their culture, which kept a good audience together until nearly 4 P.M.

At the conclusion of the ordinary business of the Floral Committee the Chairman announced that the Council wished to ascertain the opinion of the Committee with respect to the alteration of the hour of meeting. Some had found 11 A.M. too early, especially when a distance had to be travelled, and it was thought that twelve o'clock would be more suitable to the majority. Several opinions were expressed by members, some in favour of the alteration and others against: some proposing 1 P.M. as a better time. As, however, all the members of the Committee were not present, it was decided that they should be communicated with by post. The members of the Orchid Committee had already been written to upon this subject, and the majority were in favour of 11 A.M. as the hour of meeting. It was also announced that the Council had decided to hold a Fern and Carnation Congress at Chiswick in July, 1890, which would probably be the only meeting of the kind held there next year.

FRUIT COMMITTEE.—Present—T. Francis Rivers, Esq., in the chair, and Messrs. W. Warren, W. Wildsmith, J. Burnett, W. Denning, R. D. Blackmore, G. Bunyard, Philip Crowley, T. J. Saltmarsh, G. T. Miles, W. Bates, G. Wythes, W. Balderson, J. Hudson, and J. Cheal.

Messrs. G. Bunyard & Co., Maidstone, exhibited some handsome specimens of Bismarck Apple, for which a cultural commendation was awarded, and some interesting particulars were furnished, for which we hope to find space in another issue. Messrs. Rothschild, Gunnersbury House, Acton (gardener, Mr. J. Hudson), was awarded a silver medal for a collection comprising twenty-four varieties of Apples and twenty-seven of Pears, all in admirable condition. Lord Suffield, Gunton Park, Norwich (gardener, Mr. Allen), also had a fine collection of dessert Pears, including some uncommonly good specimens (silver medal). From Messrs. W. Gaymer & Son, Attleborough, Norfolk, came a large collection of cider Apples, and a silver medal was awarded; a number of dishes of good Apples also coming from the R.H.S. gardens at Chiswick. Mr. T. Laxton, Bedford, showed specimens of his seedling Pears The Berkeley and Laxton's Bergamot. Mr. T. Myles, The Gardens, Appley Towers, Ryde, exhibited three seedling Grapes from a cross between Alicante and Gros Colman, two of which partook largely of the characters of the two parents respectively; the other was nearly intermediate, the berries roundish oval, richly flavoured, and bearing a good bloom; for this a first-class certificate was awarded, and it will probably be found a useful addition to the list of late Grapes. It was named Appley Towers Seedling.

Mr. W. Bates, Poulett Lodge Garden, Twickenham, was awarded a cultural commendation for three handsome Pine Apples, two of Smooth Cayenne, 6 lbs. each, and one of Prince Albert, 4 lbs., even, well-proportioned, and capitally grown fruits.

FLORAL COMMITTEE.—Present—J. Fraser, Esq., in the chair; and Messrs. B. Wynne, R. Dean, H. Cannell, W. Holmes, Lewis Castle, T. Baines, C. Noble, C. T. Druery, Shirley Hibberd, and G. Paul.

Messrs. J. Veitch & Sons, Chelsea, exhibited a large and beautiful group of plants suitable for table decoration, which attracted much attention, and the Committee unanimously awarded a silver Banksian medal for it. The plants represented were as follows, all in a small state, and admirably fitted for the use for which they were intended. Those with variegated foliage are marked with an asterisk. *Dracenas angustata*, *angustifolia*, *Cooperi*, *terminalis*, *norwoodensis*, *Louisa*, *terminalis alba*, *Doucetti*, *Ernesti Frederici*, and *gracilis*; *Crotons elegantissimus*, *Countess*, *Johannis*, *angustifolius*, *Chelsoni*, and *volutus*; *Aralias Veitchi gracillima*, *Kerchoviana*, *Chabrieri*, and *elegantissima*, *leptophylla* and **monstrosa*; *Panax Victorie* and *fruticosum multifida*; *Carex viridis* and **variegata*; **Bambusa Fortunei variegata*, **Pandanus Veitchi*, **Ananassa sativa variegata*, *Asparagus plumosus nanus* and *tenuissimus*, *Tillandsia Zahni*, **zebrina*, **majus*, and **tessellata*, *Nidularium amazonica*, *Nepenthes Mastersiana*, **Fittonias Pearcei* and **argyrea*, **Ophiopogon spicatus*, **Acalypha musaicus*, **Begonias Arthur Malet* and **Louis Chrétien* (improved), **Gynerium argenteum variegatum*, **Eurya latifolia variegata*, *Anthericum latifolium*, and **albo-medio pictum*, *Cocos Weddelliana*, *Geonoma gracilis*, *Kentia gracilis*, *Thrinax elegans*, *Kentia Belmoreana*, *Areca Verschaffelti*, *Phoenix rpicola*, *So-anum Capsicastrum*, **Ficus Parcelli*, *Grevillea robusta*, **Aspidistra lurida variegata*, *Sarracenia Chelsoni*, *melanorhoda*, *Wrigleyana*, and *porphyro-neura*. Ferns.—*Pteris serrulata*, *cretica nobilis*, *hastata*, and *adiantifolia*; *Adiantums farleyense*, *cuneatum*, *cardioclæna*, *fulvum*, *setulosum*, and *macrophyllum*; *Nephrolepis Duffi*, *Doryopteris palmata*, *Polypodium aureum*, *Scolopendrium vulgare* and *Kelwayi*. Messrs. Veitch & Sons also had a neat tastefully arranged collection of Japanese Maple leaves (bronze medal), and specimens of greenhouse

Rhododendrons, including one which was said to be a cross between *Azalea indica Stella*, and one of the *javanicum* type (vote of thanks).

Messrs. J. Laing & Sons, Forest Hill, S.E., sent a collection of *Chrysanthemum* blooms, comprising some grand blooms of new varieties, but in several cases as there were only two blooms they could not receive an award or special recognition. *Stanstead White* was beautifully represented; *Condor*, with extremely broad florets, but rather loose blooms; *M. Bernard* was also fine. Mr. G. Stevens, Putney, showed blooms of *Chrysanthemums Gorgeous* (Japanese) and Japanese *Anemone Jeanne Marty*, light in colour; and *Nelson* (award of merit). Mr. H. B. May, Upper Edmonton had an interesting collection of berries (bronze medal). Messrs. H. Cannell & Sons, Swanley, had an extensive collection of *Chrysanthemum* blooms and plants of the neat double white *Tuberous Begonia Octavie* (vote of thanks.) Very notable were *Miss Gorton*, pink Japanese, *Nelson*, *Sunflower*, *L'Or du Japon*, *Amy Furze*, *Avalanche*, and *Madame Laing*, a moderate size Japanese of a deep purplish hue.

Mr. W. Wildsmith, Heckfield Gardens, sent a stand of *Chrysanthemum* blooms, comprising twelve good blooms of *Avalanche*, some of the finest we have seen, and perfectly pure (vote of thanks). Mr. G. Wythes, Syon House Gardens, Gunnersbury, sent a large plant of *Hymenocallis macrostephana* in flower (vote of thanks).

ORCHID COMMITTEE.—Present—H. J. Veitch, Esq., in the chair; Messrs. J. O'Brien, H. Ballantine, H. M. Pollett, J. Douglas, and E. Hill.

Sir T. Lawrence, Bart., M.P., sent a plant of *Cœlogyne speciosus*, having buff coloured broad sepals and very narrow recurving petals, the lip white at the tip, dark dull red in the centre and at the base (vote of thanks). Messrs. F. Sander & Co., St. Albans, sent a plant of *Oncidium hæmatochilum pictum*, the sepals and petals regularly mottled with reddish brown, the lip mauve with a crimson centre; also a plant of *Dendrobium Slatterianum* in the way of *D. bigibbum*, but with larger and darker flowers in racemes. From Mr. Gledstane, Manor House, Gunnersbury, Acton (gardener, Mr. Dennison), came a fine plant of *Dendrobium formosum giganteum*, bearing about thirty large flowers (cultural commendation). Mr. Tautz, Studley House, Shepherd's Bush (gardener, Mr. Cowley), sent several Orchids, including *Odontoglossum Ins'eayi splendens* and *splendens aureum*, also a very large variety of *O. grande*, for which an award of merit was granted, and a variety of the same species named *aureum* with pale flowers. The Duke of Marlborough, Blenheim Palace, Woodstock, showed a plant of *Cattleya aurea blenheimensis*, in which the sepals and petals were of a lighter colour than usual.

FIRST-CLASS CERTIFICATES.

Epidendrum scepterum (Sir T. Lawrence, Bart., M.P.).—A botanical certificate was awarded for this Orchid, which has small flowers with narrow sepals and petals, yellow spotted with dark crimson, the lip roundish, white spotted with crimson and deeper at the tip.

Pteris leptophylla princeps (H. B. May).—A graceful erect Fern with irregularly but finely divided fronds somewhat inclined to be crested at the tips.

Carex variegata (J. Veitch & Sons).—A very narrow-leaved graceful plant, the leaves having a central white stripe, and elegantly recurving.

AWARDS OF MERIT.

Chrysanthemum Eynsford White (Messrs. Cannell & Sons).—A beautiful white Japanese variety with recurving florets of fine substance, deep handsome flowers. It was thought by one member of the Committee to be much like *Avalanche*, but blooms of the latter variety exhibited at the same meeting were totally different in character.

Chrysanthemum William Neville (Messrs. Cannell & Sons).—A Japanese reflexed variety with blooms of moderate size, bronzy yellow, the florets flat and notched at the end.

Chrysanthemum M. Pa-chouke (Messrs. Cannell & Sons).—A Japanese Anemone with large handsome flowers, the guard florets broad and spreading, the centre dense and high, the colour a deep reddish purple.

Chrysanthemum Nelson (G. Stevens).—A fine Japanese Anemone with broad guard florets and a good centre, purplish crimson.

Chrysanthemum Stanstead Surprise (J. Laing & Sons).—A handsome Japanese variety with drooping florets slightly upcurving at the tips, deep crimson in young blooms, silvery on the under surface.

NATIONAL AURICULA AND NATIONAL CARNATION AND PICOIEE SOCIETIES.—SOUTHERN SECTION.

THE annual General Meeting of the members of these Societies took place in the room of the Horticultural Club, Hotel Windsor, on the 22nd inst., Mr. Shirley Hibberd in the chair. Among the members present were the Rev. H. H. D'Ombraim, T. E. Henwood (Treasurer), J. Douglas (Hon. Secretary), H. Turner, H. Cannell, J. Lakin, R. Dean, C. Phillips, W. L. Walker, J. J. Kew, M. Rowan, &c. The minutes of the last meeting having been read the business of the Auricula Society was first taken. In reference to the dates of the exhibitions it was reported that it was thought that a meeting of the Royal Horticultural Society would take place on April 22nd, and that the Council would offer the Auricula Society the same terms as last year.

A letter was read from Mr. William Holmes of Hackney offering, on behalf of the Royal Aquarium Company, liberal terms to have the Auricula and Carnation Exhibitions there in connection with Exhibitions it was proposed to arrange. It was further stated that the Council of the Royal Horticultural Society proposed holding a meeting at Chiswick

on July 22nd and 23rd, that there would be an Exhibition of Ferns and Carnations, and arrangements had been made for a trial of border Carnations on a large scale. It was therefore suggested the Exhibition of the Carnation Society should be held in connection with this meeting; it was thereupon resolved that the Auricula Show should be held in connection with the R.H.S.'s meeting on April 22nd, that Mr. William Holmes be thanked for his offer on behalf of the Royal Aquarium Company, that the Carnation Show take place at Chiswick on July 22nd, the Committee of the Society to co-operate with the Council of the R.H.S. in carrying out a Carnation Conference, and it was suggested that Mr. Martin Rowan should read a paper on the "Culture of Carnations in Towns," and Mr. Richard Dean one on "Border Carnations." The Treasurer, Mr. T. E. Henwood, then submitted a financial statement, showing there was a balance in hand in favour of the Auricula Society of £7 18s. 9d., and of the Carnation Society of £4 7s. 5d., the sum of £25 having been invested at the commencement of the year. Mr. J. Douglas submitted a report dealing with the Exhibitions of the past year, and bearing testimony to the prosperous condition of both Societies. Mr. Shirley Hibberd was re-elected President of the Auricula Society; Dr. Hogg, Dr. Masters, Messrs. J. T. D. Llewelyn, H. S. Leonard, and H. J. Veitch Vice-Presidents; Messrs. J. F. Kew and J. Lakin were added to the Committee; Dr. Hogg and Mr. H. J. Veitch re-elected Auditors; Mr. T. E. Henwood re-elected Hon. Treasurer; and Mr. J. Douglas Hon. Secretary. Mr. J. D. T. Llewelyn was re-elected President of the National Carnation Society; the names of Lady Wolverton, Lady West, and Miss Tufnell were added to the Patrons; Messrs. H. S. Leonard and H. J. Pearson were added to the Vice-Presidents; the Committee were re-elected; and also Mr. T. E. Henwood to the office of Hon. Treasurer; and Mr. J. Douglas to that of Hon. Secretary.

The schedules of prizes of last year were adopted for the coming season, and it was arranged the Judges should be appointed at a meeting of the Committee on March 11th. The rules which applied to both Societies being found somewhat inelastic, they were duly revised and brought into harmony with the practice of the Society. The meeting closed with votes of thanks to the Treasurer and Secretary, and to Mr. Shirley Hibberd for presiding.

REVIEW OF BOOK.

Manual of Orchidaceous Plants. Part V. Masdevallia, Pleurothallis, Cryptophoranthus, Restrepia, Arpophyllum and Platyclinis. James Veitch & Sons, Royal Exotic Nursery, 544, King's Road, Chelsea. 1889.

THE character of this excellent work on Orchids is being thoroughly well maintained, each successive part issued giving abundant proof of the care exercised in its production, and that the effort to render it a reliable work of reference is successful. In the part under notice which has just been published, the sub-tribe Pleurothallia of the Tribe Epidendrea is that dealt with, including the genera named above, but the chief space is necessarily devoted to Masdevallias. The part is indeed really a monograph of this genus, and as such it possesses special value, for something of the kind has long been needed. An elaborate monograph, with coloured plates of all the species, has been promised and talked about for a considerable time, but we have not yet seen it or heard that it has been published. Such a book would be a valuable production, but the cost would place it out of the reach of many Orchid amateurs. That from Messrs. Veitch, however, now to hand, supplies all that is required of descriptive, cultural, and historical information at a moderate expense to the purchaser. It is, therefore, an especially welcome addition to Orchid literature, and one that will prove useful to amateurs and gardeners alike, as several important cultural details are included. Briefly noting the genera described, the first is

PLEUROTHALLIS.

Although 350 species are known of this genus, very few are in cultivation, and Messrs. Veitch only include six species as worthy of particular mention—i.e., *P. Barberiana*, *P. insignis*, *P. leucopyramis*, *P. picta*, *P. punctulata*, and *P. Roezli*. The others were mostly small plants with insignificant flowers, though some of these are interesting structurally. *P. Barberiana* is a curious little Orchid, also known as *Masdevallia Culex*, which is given as a synonym in the body of the work, but at the end of the *Masdevallia* portion, under the head "Excluded Species," *M. Culex* is said to be now referred to *Pleurothallis macroblepharis*. *P. insignis* is one of the largest flowered species, *P. Leucopyramis* has numerous small white flowers, *P. picta* has bright yellow and red flowers, *P. punctulata* has yellow flowers spotted with red and purple, and *P. Roezli* has the most richly coloured flowers of any *Pleurothallis* yet discovered, "deep sanguineous purple."

CRYPTOPHORANTHUS.

This genus has been founded upon the peculiar *Masdevallia fenestrata* of the "Botanical Magazine" (t. 4164), which had been previously described as *Specklinia atropurpurea*, so that under its new generic title (founded by Rodriguez in 1881), *M. fenestrata* becomes *Cryptophoranthus atropurpureum*. This is a very interesting plant with regard to its form and fertilisation, the three sepals being united at their tips, only leaving two small openings at which insects can enter. Mr. Darwin called attention to this peculiarity, and in his work on the

fertilisation of Orchids he furnished a full description of the structure. *C. Dayanum* has larger flowers of similar shape, but yellow spotted with deep reddish purple.

RESTREPIA.

The charming little *R. antennifera* is the best known of this genus, its delicately marked flowers being regarded by all Orchid admirers as amongst the most exquisite of the family. *R. elegans* is another attractive species; *R. pandurata* is said to be equally pretty, and *R. xanthophthalma* is also recommended for a place with the others.

MASDEVALLIA.

Sixty-two pages are devoted to the *Masdevallias*. Twenty-six species and hybrids are described, and illustrations are furnished of the most distinct or important. Full descriptions of the essential characters of the genus are supplied, followed by an analysis of the botanical groups under which the species are classed. The geographical distribution is treated upon at some length, and "a cultural note," occupying a couple of pages, embodies all that is necessary to be studied. We cannot refer to all the *Masdevallias* described, but it may be worth mentioning that the now well-known *M. Shuttleworthi* is placed as a variety under *M. caudata*, together with *M. xanthocorys*, *M. Wallisi*, *M. Winniana*, *M. Roezli*, *M. Gorgona*, and *M. Backhouseana* are all in a similar way placed under *M. Chimera* as varieties. The familiar *M. Lindeni* is discarded and assumes the original title *M. coccinea*, under which are ranked the varieties *conchiflora* and the useful handsome *Harryana*, with numerous sub-varieties. An interesting matter is recorded with regard to *M. towarensis*, and though it is known to many cultivators, beginners in Orchid culture are apt to overlook it. We therefore reproduce the passage, premising that it assumes more importance now the species named is so much grown for its flowers.

"A morphological peculiarity in *Masdevallia towarensis*, and also in the allied species *M. Ehippium*, *M. infracta*, and *M. maculata*, that was omitted when drawing up the sub-sectional characters of the *Polyanthæ Masdevallias*, may properly be noticed here. The so-called peduncles or scapes of all these species are sharply three-angled, and the flowers are produced from their apex, the pedicels issuing from a membranous persistent sheath that is single in *M. Ehippium* and *M. infracta*, but double in *M. maculata* and *M. towarensis*. When the flowers fade the pedicels and ovaries wither and drop with them if infertile, which is usually the case, but the long trigonal part does not wither and drop like the flower scapes of most *Masdevallias*; it continues green and fresh, and if not removed from the plant more flowers are produced from the apex in the following year precisely in the same way as on the first occasion. The same occurrence has been observed in the third season, so that it may be assumed, in default of direct observation, that so long as the leaf, from the base of which the so-called scape springs, is in a condition to perform its functions, so long will the flowers be produced from the apex of these trigonal scapes on the return of the flowering season. This circumstance shows that there is a material difference between the slender terete scapes of those *Masdevallias* that perish when the flowers drop, and the more robust three-angled ones of the species in question that persist and produce flowers from their apex two, three, or more seasons in succession. The latter are, in fact, bi-, tri-, and even perennial leafless stems, and not scapes in the strict botanical meaning of the term, such as is implied in the foregoing descriptions. It is highly probable, too, that this peculiarity is not confined to the species named above, but in the absence of direct observation we are unable to specify any others by name."

The hybrid *Masdevallias* include *M. splendida* and its variety *Pariatorcana*, regarded as a natural cross between *M. Veitchiana* and *M. Barleana*, *M. caudata-Estradae*, *M. Chelsoni* (*amabilis* × *Veitchiana*), the first hybrid raised in Europe; *M. Courtauldiana*, *M. Ellisiana*, *M. Fraseri*, *M. Gairiana*, *M. Geleniana*, *M. glaphyrantha*, and *M. Hincksiana*. The remaining genera, *Arpophyllum* and *Platyclinis*, better known in gardens as *Dendrochilum*, have several pages devoted to them, and conclude one of the most interesting parts yet issued.



FRUIT FORCING.

VINES.—*Late Varieties*.—For long and good keeping, without any deterioration of quality, Lady Downe's is without a rival, the fruit keeping fresh and plump until May. It is also a certain cropper, and though not so imposing in appearance as some it forms compact bunches, which finish in less time and invariably better than the large-berried varieties. Mrs. Pince is an excellent keeper when well finished, but when not thoroughly ripened it is from shrivelling the most unsatisfactory of the thick-skinned Grapes. Grown well it has the advantage of flavour over any thick-skinned variety, but it requires more time and heat to finish it satisfactorily than Lady Downe's. We have it in three

houses started at different times—viz., January, February, and March, and singularly it does much the best in the structure started in February, the berries being as black as jet to the stalk, and the quality equal to Black Muscat. It is one of those varieties that is not always amenable to spur-pruning, being most satisfactory on the rod or extension system.

Mrs. Pince is not a robust grower, the joints of the wood being far apart, and growing quickly; the base leaves are comparatively small, and the buds correspond, being small and ill-fed, and the variety often fails to afford profitable crops on the short or spur-pruning system. Alicante, started in good time so as to finish by the middle of September, is capital in crop and appearance through size of bunch and finish. It has the advantage of finishing well where other varieties do very indifferently. Gros Colman is the noblest of Grapes in its season, and the most profitable to grow for a market supply. It is magnificent in appearance, the berries being splendid, the bunches compact, and it is an enormous cropper. The latter property is often taken advantage of to the injury of the crop in finish and the prejudice of ensuing crops. It requires more time than any other Grape, and should be started early, so as to have August and September to finish in, and being allowed to hang a few weeks to mature its somewhat earthy flavour when cut as soon as ripe passes off, and is even relished by invalids. Gros Guillaume is magnificent in bunch and berry, and requires a long time to colour and ripen it thoroughly. On account of its large bunches it is often overcropped, in which case it is the poorest of Grapes, as it is not even sweet, and is most unsatisfactory for keeping through the softness of its footstalks. Grown well Gros Guillaume is anything but coarse or inferior in flavour. It is not always satisfactory when closely pruned, and is best grown on the rod or extension system. Alnwick Seedling is an excellent Grape, finishing invariably well, and is as good in appearance as Alicante, with a better flavour. West's St. Peter's also always finishes satisfactorily, and though its berries and bunches may be too small for our modern ideas of a late Grape, it is otherwise of a quality which renders it an excellent and esteemed table variety.

Of white varieties Muscat of Alexandria is supreme when finished so as to hang in good condition into January. Its great enemy is spot. The air must be kept from becoming stagnant, a temperature of about 50° being necessary, and air must be given early on fine mornings, with warmth in the pipes to expel moisture and allow of the berries being warmed equally with the surrounding air, moisture being kept from condensing on the berries. There must not be anything like a leak in the roof, and moisture must be prevented arising from the border by covering it with dry material, than which nothing answers better than roughly cut, clean, and dry wheat straw. This treatment answers equally well for Madresfield Court, which as a companion Grape to Muscat of Alexandria is unequalled. It will keep well into the new year, but has the disadvantage of losing colour by hanging similar to Black Hamburgs, but unlike these does not shrivel. Of late white varieties Trebbiano is large in bunch and berry, and when thoroughly ripened good in flavour, but is rather impatient of damp, which usually attack the berries at the footstalk. Syrian well ripened is by no means despicable, and similar remarks applying to Calabrian Raisin.

Earliest Forced House.—Where late Grapes are not cultivated in quantity to maintain a supply to May, or thin-skinned varieties are required by April, preparations must be made for early forcing. The Vines having been pruned in September, the loose bark stripped off, the house may be cleansed, the border top-dressed, and the Vines dressed with a solution of softsoap, half a pound to a gallon of water, brought to the consistency of cream with flowers of sulphur, adding, if there have been any scale, half a gill of spirits of turpentine, the composition being equally effective against mealy bug. The whole being in readiness as advised in former calendars, cover the outside border with leaves and stable litter preparatory to applying fire heat. If there be the convenience of making up a bed of Oak or Beech leaves, with about a third of stable litter, inside the house it will greatly facilitate the Vines breaking and be more beneficial to them than fire heat alone; therefore have them in readiness for placing in the house early in next month.

Earliest Forced Pot Vines.—To produce ripe fruit in late March or early April the Vines are best grown in pots as stated in a former calendar, selecting early sorts, such as Buckland Sweetwater, Foster's Seedling, and White Frontignan in white Grapes; and in black, Black Hamburg, Mill Hill Hamburg, Royal Ascot, and Madresfield Court. They should now be in position preparatory to starting them early next month.

FLOWER GARDEN.

Refilling Flower Beds.—Frosts have been partial, and in some positions, notably those on high ground, the summer bedding plants still present a gay appearance. Those who intend refilling the beds with spring-flowering plants ought not longer to defer destroying the tender plants, in order that their successors may be transplanted and become re-established before bad weather is experienced. The sooner the beds are refilled after the soil has been disturbed the better, as should this be delayed till much rain has fallen it will be impossible to do the work properly. All kinds of plants used must be firmly fixed in their fresh quarters, or they will not take quickly to them, and subsequent frosts will still further loosen the ground about them. No greater mistake can be made than to interfere with the beds, either for the purpose of clearing or refilling them in wet weather, the wiser course being to defer the work till it can be done cleanly and properly.

Suitable Plants.—Where a goodly stock for refilling the beds has been well prepared beforehand it is possible to arrange these in such a manner as to create an effect in the spring even more showy and pleasing than any summer displays. Aubrietias, Iberises, Arabises, Daisies, Forget-me-nots, Polyanthus, Primroses, Wallflowers, Violas, and Saxifragas are all largely used for spring beds, and with these such showy annuals as *Collinsia bicolor*, *Gypsophila elegans*, *Limnanthes Douglasii*, *Myosotis dissitiflora*, *Nemophila insignis*, *Saponaria calabrica*, *Silene pendula* in variety, and Virginian Stocks. Masses of one colour with a suitable edging are usually most attractive, and for this reason it is unwise to go in for indiscriminate mixture, or to attempt to do too much with a limited stock of plants. For instance, single lines of Polyanthus are by no means showy, but if a good-sized bed is filled with them, and edged, say, with common Primroses, quite a fine display will be had in the spring, especially if the best strains of seed have been obtained. Masses of Wallflowers, *Myosotides*, *Silenes*, *Saponaria*, *Saxifragas granulata flore-pleno*, *pyramidalis*, and *umbrosa*; and Virginian Stock, edged with a neater growing yet showy kind of plant affording a suitable contrast, these including red and white Daisies, Violas (white, yellow, and blue), common Primroses, *Arabis*, *Aubrietias*, *Alyssum saxatile*, *Hepaticas*, and *Iberis sempervirens*, will, if the beds are well filled, be very beautiful next spring. Seeing that very few of the foregoing will increase in size all should be planted rather thickly, or so as to cover the ground without crowding.

Shrubs and Conifers.—These, with other hardy plants, are frequently used extensively with good effect in these winter and spring displays. In this case again mixtures are not, as a rule, the most effective. It is possible to arrange a well-assorted collection of dwarf hardy shrubs and Conifers in large beds, much after the style smaller beds are filled in the summer with carpeting plants. Panels of *Retinosporas ericoides*, *obtusata aurea nana*, *plumosa*, *plumosa argentea* and *aurea squarrosa*, and *Taxus baccata elegantissima*, with dividing lines of the more erect *Cupressus Lawsoniana* in variety, notably *C. Lawsoniana erecta viridis*, are very pleasing in appearance all through the winter and spring months. Good masses or broad bands of Hollies in variety, variegated *Aucubas*, *Boxes* in variety, *Kalmia latifolia*, *Mahonia aquifolia*, *Laurustinus*, *Osmanthus ilicifolium aureum* and *variegatum nanum*, *Euonymus japonicus* in variety, Golden and Silver Variegated Tree Ivy, dwarf *Rhododendrons*, and *Vinca elegantissima* also look well; and among more dwarf subjects must be mentioned the very showy *Ericas herbacea carnea*, *mediterranea alba* and *rubra*, and *vulgaris aurea*. Small well-formed specimens of some of the beautiful Conifers, and especially the *Retinosporas*, are very suitable for dotting among dwarf-flowering or fine-foliaged plants, and so also are *Yucca recurva* and *Iris foetidissima variegata*, large clumps of the latter dividing readily into neat pieces. All the foregoing can be bought in quantity from the principal nurserymen who prepare them specially for the purpose, and if taken good care of when the beds are cleared in May will be available for several seasons. If old plants of Golden Pyrethrum, Variegated Thyme, *Euonymus radicans variegata*, and *Stachys lanata* are saved when the flower beds are broken up, and the smaller well-coloured Beet selected from the kitchen garden crops are taken care of, each and all of these are suitable for edging the beds filled with the shrubs and Conifers above named.

Spring-flowering Bulbs are very beautiful, and flower earlier in the season than do the flowering plants and shrubs. Unfortunately the greater portion of them are of little service a second season, and those, therefore, who have preserved the bulbs that flowered last season will do well to plant these in mixed borders, or where they will not be disturbed for several years, a fresh stock being bought at once for affording a display next spring. Hyacinths, Narcissi, Tulips, Crocuses, Scillas, and Snowdrops are the bulbs most generally planted in beds, and the sooner they are got in the more strongly they will flower, it being of importance that all become thoroughly well rooted before the flower spikes are thrown up. By some mixtures of Hyacinths and Tulips are considered most pleasing, and others prefer to see masses of one or two colours only, the front lines or circles being planted with either Crocuses, Snowdrops, or Scillas. Single rows of the latter present a somewhat meagre appearance, and a band composed of about three lines is far more attractive, the bulbs being dibbled from 3 inches to 4 inches apart, and the same distance deep. Narcissi and Hyacinths may be disposed about 9 inches, and Tulips 5 inches apart, and 4 inches deep in each instance. If bulbs only are planted in beds the latter may be covered with neat sprays of Tree Ivy, Holly, Portugal Laurel, or *Aucuba*, arranged much as the beds might be filled with plants, and firmly fixed without injuring the bulbs. Failing this, the beds would present a more cheerful appearance during the winter if covered either with fresh ballast or cocoanut fibre. Bulbs are also effective when used in conjunction either with dwarf flowering plants or shrubs, in which case they need not be so thickly planted. The Narcissi being the tallest ought to be somewhat in the background or the centre of a bed, the Hyacinths coming next, and then Tulips.

Christmas Roses.—These are occasionally transplanted to the flower beds at this time of year, and if the coarsest and oldest leaves are removed prior to flowering they are fairly effective. This season they promise to be exceptionally floriferous, a showery summer suiting them well. They transplant to the beds and back to their summer quarters readily enough, but disturbed in this way they rarely flower well the following season, and two series of plants are therefore required, each being allowed a rest alternately.

PLANT HOUSES.

Lilium Harrisii.—These are ready for removing from the plunging material in which they were placed when first potted. If left too long the material used for covering the surface will become full of roots and be difficult to remove without injury. If the soil has not been watered a good soaking may now be given and the plants placed where a night temperature of 50° can be maintained. A light position is essential, admitting air daily when the weather is favourable. For the next few weeks the flower stems will grow rapidly and strongly if sufficient ventilation is provided to prevent their drawing up weakly. *Lilium candidum* removed from cold frames to the same temperature will quickly commence pushing up flower stems, but this *Lilium* must not be hurried in its early stages.

Lily of the Valley.—After these are potted or placed in boxes amongst leaf soil or cocoa-nut fibre refuse place them outside, where they can be kept moist. Expose the crowns, and after one good frost they may be introduced into the forcing house. After they have been frozen they advance rapidly and come into flower. Brisk heat is necessary for the early ones, and the crowns should be covered with a few inches depth of the material in which they are plunged.

The Forcing House.—Where quantities of forced flowers are required set apart a house or pit for the purpose. Select one if practicable where a slight hotbed can be formed. Good leaves are now plentiful for this purpose, and if these are mixed in a dry state with a small quantity of litter from the stable it will retain gentle heat for a long time. Rhododendrons, Ghent and Japanese Azaleas, Lilacs, Guelder Roses, Deutzias, and other similar plants are assisted wonderfully during the declining weeks of the year by the aid of gentle warmth at their roots. The genial moist heat that rises from fermenting material is much more suitable for exciting the plants than the dry heat derived from hot-water pipes. When hardy flowering shrubs have been plunged in a bed of this description no better position can be found for Tulips, Hyacinths, and Narcissi than to stand them on the surface of the bed amongst the other plants.

Hardy Flowering Shrubs.—Lift these in quantity and pot them from time to time as Chrysanthemum and other pots become vacant. Leave them outside until a sharp frost has cleared deciduous kinds of their foliage. It is not necessary to house plants of this nature; they are better outside until they are wanted. Plunge the pots to protect them from frost. *Spiraea japonica* should be lifted and potted; place them outside for a time afterwards.

Deutzia gracilis.—All the plants needed for forcing are established in pots, and will remain outside until the whole of their foliage has fallen. Our earliest plants are grown for a time inside, and therefore they are ready for introducing at once into the forcing house. Repot young plants that have been raised from cuttings and grown in outside borders. However strong and good they may be they are unsuitable for forcing. If forced before they are thoroughly established in their pots growth will be puny next year. If placed in 6 or 7-inch pots according to the size of the plants, and plunged outside until severe frosts set in, then pruned and plunged in cold frames and allowed to start into growth in this position in spring, they will be useful by the following autumn, and in the best condition for forcing. To keep a stock of plants in the best of health and condition it is not only wise to pot a few young plants annually but to partially reduce the bulbs of a few that display signs of declining vigour. The latter in other respects should be treated the same as young stock. One season's rest is ample to induce them to make strong clean growth from the base.

Hybrid Perpetual Roses.—Where these are wanted for flowering in pots to precede those grown outside or for next year's forcing, plants grown at home may be lifted at once. Place these in 7 or 8-inch pots according to their size. Ordinary trade plants lifted at the end of the month may be placed in the former. Straggling roots may be shortened, and also long growths, leaving them about 2 feet long. The pots should be clean and well drained, and the plants potted in a compost of good fibry loam, one-seventh of manure, one 6-inch potful of bone meal, and the same quantity of soot to each barrowful of loam. If the loam is heavy add sand, old mortar, charcoal, or anything similar that will keep it open and porous. If light add clay that has been reduced to powder by drying. After they are potted plunge them outside, covering the surface of the soil with the plunging material. During bright or dry weather syringe daily to keep the foliage fresh to induce the formation of roots.

they need not be separate. The fine quality when hives are properly managed does not decrease the quantity, unless when full-sized sheets of foundation have not been used, which I also commend. When full these are used in supers it renders the honeycomb unpalatable and unfit for the table of delicacies, so do the previous year's built combs. Notwithstanding all that has been written upon the production of comb honey, much of it reaches the market as a third class article.

Owing to circumstances over which I had no control my hives were fewer in number than previously, and even the third of that fewer number were all I had at the moors. Should health permit the same will not occur again. Owing to this many of my regular customers have been unserved. Their disappointment was great, but not more than my regret. Not only did I fail to supply the regular demand, but many new customers came; the sole cause of this being people have learned that great care is taken that nothing comes into contact with our honey that the most fastidious would object to. A number of wealthy people have asked for honey from this year, and make no secret of the cause of their visit. The following is the expression of one lady:—"We like honey, and would use much of it when we have the assurance that it is cleanly handled. As to comb honey, we cannot think of using that openly exposed in shop windows." Several years ago I drew the attention of your readers to the above objectionable practice. Honey exposed to the atmosphere is liable to become a source of danger to those who eat it, as it undoubtedly absorbs noxious gases and odours.

Then as regards drained honey, there are very few who have the proper appliances for extracting thick honey, such as Heather honey is, and the process of extracting without them is too well known to encourage the desirable consumpt of honey. Reams of paper and tons of honeycomb have been blackened by the departure from common sense management to that of employing queen-excluders and honey boards as they are termed.

Owing to my inability to supply all the demands from my own I made an effort to secure 20 lbs. of first-class honeycomb wanted for a special purpose. I overhauled some 600 lbs. in all of two apiaries, and failed to secure even 10 lbs. first class. The largest owner of about 500 lbs. has seen his error, and a reconstruction of his hives has already been made, so that neither queen-excluder zinc, open crowns, nor previously made comb will ever be employed by him again.

THE STEWARTON HIVE.

The Stewarton hive and its properties have so often been touched upon that I need not repeat them, but add that this year has especially suited them. They have yielded more honey, and, singular to say, are the only ones within my knowledge that have given fully completed supers of matchless purity. It has been often contended that sections cannot be wrought upon them. This is a fallacy. One of the simplest modes is to have the supers of the proper depth (not square ones) for sections, so that they clear the top of the hive a quarter of an inch, and of one width throughout, except the bottom rail, which should not be more than five-eighths of an inch broad. Fasten the sections to the top bar with fine wire nails half an inch long. The outer bevelled bars may be allowed to stand as they are, serving to supply customers able and willing to purchase more than a pound at a time.

Strange to say that "Scot" has been working his sections in this manner unknown to me. After the full sections are removed a pair of cutting pincers or plyers applied to the projecting nail points removes them easily. At this time our strongest hives in our narrow square hives—and some of them are extra strong—have a cold feel at the corners, whereas in equally strong Stewartons there is no perceptible difference, and it is simply this equalisation of temperature that is so favourable for making the Stewarton hive the best honey producer. The heat on the crown of any of our hives is the index which tells us the condition of our hives and what to do at the proper time, and the hive that has not enough proper material to destroy this is improperly covered.



NOTES ON BEES.

MAKING COMPARISONS.

IN order to give bee-keepers every opportunity of getting their bee-keeping appliances in perfect order for next season I cannot do better than describe what I have witnessed in comb honey during the past week or two. It is well known that I advocate superior quality to that of quantity, but at the same time have shown that

STORING OF HONEY.

Bees perform this work in a manner so perfect that we have only to look into Nature's larder to see it in perfection, the honey being stored and sealed in hermetically sealed cells, so that the external air will have no influence on it whatever. The honey overhanging the cluster of bees is never allowed in a normally strong hive for long, but is either first consumed by the bees or is immediately removed to a warmer place in the hive, and this is one of the reasons that octagon or round supers are, as a rule, better finished than square ones.

SCREW CAPS.

Jars having screw caps are, as a rule, greater favourites with bee-keepers, especially competing ones, but they are not as made the best for storing honey in. The screw is never so close as to exclude air nor prevent the escape of honey, and honey stored in them does not retain its natural consistency, but gets gradually thinner the longer it is kept. The same may be said of preserves. We have some Morello Cherry jam in them, as well as in tie-overs, and in common jelly cans. In every case where the screw caps are used the jam is fermented, while that in the tie-overs covered with good vegetable parchment is in a good state of preservation. Honey sometimes stands a good deal of ill treatment, but it is always advisable to do what is right for its preservation until it is eaten, although the plan is not popular.

COMPARISONS AND RESULTS.

Before closing this chapter it may not be out of place to give both sides of the success and non-success of an Arran bee-keeper. At one time he was a successful bee-keeper on the Stewarton principle, but became a convert to that hive that its inventor said of it, "The hive that was suitable for one locality might not be that for another," a saying not in accordance with facts, nor within our experience. This bee-keeper has somewhere about fifty of these combination hives, has not a single pound of honeycomb, while those having Stewartons almost side by side have a large surplus. I have always maintained that there are different systems which should be pursued according to season and locality, but the proper hive is one that can be easily adapted to both under any circumstances, and the hive that cannot be controlled to suit these is not the hive, and hives sent out without the vendors being able to give proper instructions is a dead score against them.

BLOW'S PATENT GROOVED SECTION.

A correspondent has sent me a section grooved for foundation marked as above with several queries, one of which, "Is it new?" It is not new; besides, the groove for foundation was my own contrivance in 1862, and I know of others that had their frames grooved all round as early as 1874; besides, when I made sections they were always grooved, and that from the first. I know nothing of the patent laws, but I do not think that they will prevent anyone in the face of the above facts from making, using, or selling grooved sections without being mulcted in any tax whatever, as the plan is not new, which I am prepared to prove.—A LANARKSHIRE BEE-KEEPER.

MR. ALFRED NEIGHBOUR.

THE "British Bee Journal" has recently published a portrait of the above named well-known bee-keeper, accompanied by the following biographical remarks:—

Mr. Neighbour was born in High Holborn, London, on the 24th of October, 1825. He is the son of the late Mr. George Neighbour, and a member of the firm of George Neighbour & Sons. His father established the business in Holborn about the year 1814; and in 1824 Mr. Thomas Nutt of Spalding, Lincolnshire, inventor of the collateral and other hives, offered him the agency for the sale of these appliances. In 1827 Mr. Nutt published the first edition of his work entitled, "Humanity to Bees," which ran into a seventh edition. Mr. Nutt was in the habit of periodically visiting his patrons who resided in the neighbourhood of London; and Mr. Alfred Neighbour frequently accompanied him in these excursions, and witnessed his fearless manner in manipulating with bees, and thus in very early life acquired a taste for apianian pursuits. For many years a public apiary was kept up by Mr. Neighbour in the Zoological

Gardens, Regent's Park. The hives were originally Nutt's; at a later period the unicom and other transparent hives were substituted, which proved to be more attractive to visitors. These excited considerable interest, and were by no means the least valued objects in the Gardens. The Royal princes and princesses were accustomed when children to pay frequent early morning visits to the Gardens, and the bee-house came in for a share of their attention. On one of these occasions Mr. Neighbour was fortunate to be at the apiary, and had the honour of pointing out to them the queen bee, and explaining the mode of working the hives. This apiary was pulled down to make room for the large monkey house, and the Council of the Society have not seen their way to erect another bee-hive house in its place.

The Great Exhibition of 1851 offered the first opportunity for the competitive display of hives. Side by side with the late Mr. John Milton of No. 10, Marylebone Street, Wimpole Street, Messrs. Neighbour exhibited living bees in glass hives, and a collection of bee furniture. It was at this Exhibition that a French exhibitor, M. Debeauvoys, was awarded the first prize for his vertical frame hive. This was the earliest frame hive brought to this country, excepting Huber's leaf hive, which differs in construction from that technically known as a frame hive. The moveable comb hives then constructed in England were those of Dr. Bevan, Mr. Golding, and Mr. H. Taylor, which had top bars only. The combs had to be severed from the sides of the hives whenever required to be drawn out and inspected. The success attending the Great Exhibition induced other exhibitions to follow, and at Dublin, Edinburgh, and at Paris, the firm of Neighbour & Sons received many prizes for their collection of miscellaneous appliances.

Mr. Neighbour was very closely acquainted with Mr. Henry Taylor of Highgate, author of the "Bee-keeper's Manual," who frequently was a guest of Mr. George Neighbour at Dorking, whither the latter gentleman had retired when he was released from business; and in consequence of this intimacy Mr. Neighbour had many opportunities of improving his knowledge of apiculture.

In consequence of an offer from Mr. Hermann in Switzerland to send over a Ligurian queen bee to be placed at the head of an English stock, Mr. Woodbury was induced to avail himself of the offer, and at the same time Mr. Taylor persuaded Mr. Neighbour to make application for a queen; the two queens arrived simultaneously. Mr. Woodbury was successful in joining his queen to an English stock. This was the commencement of a new era in bee-keeping, and with the introduction of the Ligurians to this country there sprang up an acquaintance between Mr. Woodbury and Mr. Neighbour which continued till the death of the former in July, 1870, at his residence, Mount Radford, Exeter.

Soon after the introduction of the Ligurian bee, Mr. Langstroth, the American apiarian, published his work, "The Hive and Honey Bee," which described his invention of hives on the bar-frame system, and at the same time bar-frames were also brought to notice in Germany by Baron von Berlepsch, who made improvements on Dr. Dzierzon's method. Mr. Woodbury was not slow in estimating the value of this invention, and, in adapting the combs of his bar hives to it, he constructed what he termed "a compound frame," which consisted of a frame with open top and shoulders on each side of which the bar rested, whilst the comb as taken from the hive was suspended vertically within the frame. Messrs. Neighbour, who were the first vendors of Woodbury hives, resorted to fixed frames as originally planned, and which have been in use ever since. The second London International Exhibition was held at South Kensington in 1862, at which Messrs. Neighbour exhibited living bees and hives. The space awarded was in the Agricultural Annexe, a location not nearly as good as that in the first Exhibition of 1851.

Mr. Neighbour in recent years has been much engaged, with the aid of Mr. Duncan Keir of Scotland, who was introduced to Mr. Neighbour by "The Renfrewshire Bee-keeper" (J. M. McPhedran, Esq.), from whom also many valuable hints were given to assist the enterprise, in packing and forwarding humble bees to New Zealand during winter, and whilst in a torpid state. These bees were much needed in the colony for the fructification of the Red Clover, the blossom of which is inaccessible to the ordinary honey bee. The importation of Cyprian, Syrian, and Holy Land bees has also claimed much of Mr. Neighbour's attention. Mr. Frank Benton, who, as is well known, has made a temporary home in Cyprus and Syria for the purpose of procuring queens from native sources, was accustomed to forward small colonies of these bees to Mr. Neighbour to be refreshed at his apiary, and re-shipped to Mr. D. A. Jones in Canada. Some of the earlier consignments were very satisfactory, but, owing to a change in the packing the business became so discouraging (but a few queens survived) that it was discontinued by him. Mr. Neighbour was the first to introduce the Carniolan bees into this country. He continues to cultivate and recommend them for their docile qualities. At the Swiss or German department of the Exhibition Mr. Neighbour purchased the impressed metal plates for making wax foundation. Many castings were made from the original and disseminated to various parties. From the foregoing it will be seen that Mr. Neighbour has enjoyed unusual opportunities of becoming acquainted with the leading apianian celebrities of the day; among others the Rev. William Charles Cotton, M.A., rector of Frodsham, Cheshire, and Dr. Coster of Hanwell.

In 1880 Mr. Neighbour attended, in company with Mr. S. Stutterd, the translator of Dr. Dzierzon's book, the German meeting of bee-masters at Cologne, at which his firm were exhibitors, and received from the hands of the Burgomaster at the public distribution of prizes the State silver medal. He had the pleasure of being introduced to most

of the leading bee-keepers attending the Congress, which included Dr. Dzierzon, Herr Vogel, the Baroness von Berlepsch, Dr. Pollman, and many others.

Reference has been made to Mr. Neighbour keeping bees at Dorking, but "foul brood" unfortunately broke out in his apiary there, and a convenient plot of ground offering at West End, Hampstead, he began afresh nearer London, which was so much more convenient for him. Over twelve years' residence at Hampstead was brought to a close in consequence of the ground being required for building purposes; so a place had to be sought removed from the liability of such disturbance. This was found at Buncfield, Hemel Hempstead, where his apiary at present is.

In the year 1852 Mr. Neighbour acquired premises at 149, Regent Street, possession of which he retained till very recently, when they were required for Government purposes. His business is now conducted at 127, High Holborn.

Mr. Neighbour is the author of a work on bees, entitled "The Apiary; or, Bees, Bee Hives, and Bee Culture," which has passed through three editions. He has a library containing perhaps the largest and best collection of books on the subject of bees and bee-culture of anyone in the kingdom, many of the works being of great age and very rare.

TRADE CATALOGUES RECEIVED.

W. & J. Birkenhead, Fern Nursery, Sale, Manchester, — *Lists of Ferns, and Selaginellas and Bulbs.*

G. Prince, 14, Market Street, Oxford. — *Catalogue of Roses.*

Dicksons & Co., 1, Waterloo Place, Edinburgh. — *List of Select Roses, 1889-1890.*

Wm. Cutbush & Sons, Highgate and Barnet. — *General Catalogue of Plants.*

Cooling & Sons, Bath, Somerset. — *Catalogue of Roses and Fruit Trees.*

P. J. Looymans & Son, Oudenbosch, Holland. — *List of Trees.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (J. F. M.).—We do not know that any work is published on the subject you name. You could perhaps obtain the information by writing to Mr. Leonard Coates, Fruit Grower, &c., Napa, California. (*E. Hurton*).—The gold medal Fruit Essay is expected to be ready in November, and will be issued from this office, price 1s.; post free, 1s. 3d. (*J. E.*).—Mr. B. S. Williams' "Orchid Grower's Manual" will be found useful, also Mr. L. Castle's "Orchids: their Structure, History, and Culture," post free from this office, price 1s. 2½d. You are probably not aware that Thunias make and lose their growth annually. That is probably the case with your plant.

The National Chrysanthemum Society's Catalogue (T. K.).—The above catalogue can be had from this office post free 1s. 1d.

Onions (Constant Reader).—The varieties you mention are not red. As the other information you seek is of a local character, you can best obtain it by writing to Mr. H. Deverill, Banbury, Oxon.

Exhibiting Primulas (F. T.).—If there is no stipulation to the contrary in the schedule, you can stage either double or single Primulas, or both, choosing what you consider the most meritorious plants.

Storing Fruit (W. J.).—The conditions most conducive for the preservation of fruit are a dry atmosphere and a cool equable temperature with darkness. Light hastens decay; so does a close, warm, damp atmosphere, while over-dryness with heat induces shrivelling. It is well, then, to keep your fruit-room tolerably dark, cool, and airy. We would not be at the trouble, however, to barricade the windows to any inconvenient extent.

Dog's-tooth Violets and Ixias (E. J. N.).—They can both be grown in pots plunged just over the rims in cocoa-nut fibre refuse in cold frames, allowing them to remain there till the flowers commence expanding, then the plants may, if desired, be removed to a greenhouse. They require full exposure to the air during mild weather after growth appears, drawing off the sashes on all favourable occasions. The Temple Chrysanthemum Show is not open to the public on Sundays.

The Preservation of Fruit by Evaporation (H. C. W.).—If you consult the *Journal of Horticulture* of August 29th of the present year you will find an illustration of an appliance for this purpose that was tried at the Royal Agricultural Show at Windsor, and proved satisfactory. It was exhibited by Messrs. Y. C. Mayfarth & Co., Franfort-on-Maine, and awarded the first prize. We think there is a London agent, but this you can ascertain by writing to the proprietors of the apparatus at the address given.

Orchid Leaves Diseased (J. J. Lancashire).—The cause is probably an excess of moisture, and it frequently occurs in houses where too much fire heat is employed, with a corresponding amount of water and insufficient ventilation. The plants then become weakened and unhealthy, and are readily injured. The hardier the plants can be grown consistent with their safety, the more likely they are to escape such diseases. An unduly low temperature, and damp, stagnant atmosphere will induce a similar leaf disease.

Keeping Grapes (J. G.).—As the Grapes will not keep on the Vines you have nothing to lose by inserting the laterals bearing the bunches in bottles of water, fixed slantingly so that the berries hang clear, in a dry room having an equable temperature of about 45°. A degree or two less is not a matter of consequence, but sudden fluctuations of temperature are inimical. Very much also depends on the condition of the Grapes. Well ripened and with good skins we have frequently had Black Hamburgs in excellent condition at Christmas.

Norfolk Beefing Apple (A. T. H.).—You say for fifty years you have seen the name spelt "Biffin." So have we. The "Fruit Manual" says:—"This Apple is extensively cultivated in Norfolk, where, besides being applied to general purposes, the fruit is baked in ovens, and form the dried fruit met with among confectioners and fruiterers, called 'Norfolk Biffins.' The name of this Apple is sometimes written Beaufin, as if of French origin, but it is more correctly Beefing, with a good English ring, from the similarity the baked fruit presents to beef."

Scale on Rose Leaves (J. C.).—The leaves you have sent are infested with scale, which can be destroyed by the softsoap and petroleum mixture that has been so often recommended, and the method of preparation described, that it seems scarcely necessary to repeat it. Half a wineglassful of petroleum well mixed in a solution of nicotine soap or Gishurst compound will destroy the insects if applied towards evening with a syringe, but it is desirable to afford shade the day following if the sun is bright. We should not like to have so much scale in a vineyard of ours as you appear to have in yours. Printed instructions for preparing the insecticides named accompany them.

Plants for Rockery (R.).—*Alyssum maritimum*, *A. saxatile* compactum, *Arabis alba* variegata, *Arenaria purpurascens*, *Aster longifolius* formosus, *Aubrietia deltoidea* grandiflora, *Campanula garganica*, *Cheiranthus alpinus*, *Cistus laurifolius*, *Cytisus decumbens*, *Draba boeotica*, *Erica carnea* and var. *alba*, *Erysimum rupestre*, *Genista præcox*, *Iberis correaefolia*, *I. sempervirens* plena, *Lithospermum prostratum*, *Lotus corniculatus* plenus, *Phlox subulata* Nelsoni, *P. verna*, *Potentilla splendens*, *Saxifraga Burseriana*, *S. Camposi*, *S. Cotyledon pyramidalis*, *S. longifolia*, *Sedum spectabile*, *Silene maritima* plena, and *Zauschneria californica*. *Hypericum calycinum* and *H. olympicum* do well in somewhat shady dry places, also *Vinca major*, and var. *elegantissima*, *V. minor*, and var. *plena*. All the others require sunny positions.

Galvanised Wire for Walls (F. J. B.).—Galvanised wire answers well for fruit trees both outdoors and under glass. The wires for Peaches, Nectarines, and Apricots are usually 6 to 7 inches apart, or in every alternate course of bricks, but we find it better to have them corresponding to every course. As yours is a stone wall we should have the wires 6 inches apart. The nearer the wires are to the wall the better for the trees, but for convenience of tying they require to be ¼ to ½ inch. When there is a space between the wires and the wall greater than that named we find the growth of the trees is not so satisfactory, probably from their not being benefited to the same extent by its warmth, or it may be due to the current of air constantly taking place in the space between the trees and wall. No. 12 is the most suitable wire, that known as "specially prepared galvanised wire for walls" being the best kind to use.

Lapageria alba—Coleuses (W. W., Reading).—You would possibly do more harm than good if you were to materially disturb the roots of your *Lapageria* now. Turn it out of the pot carefully, pick away any inert soil with a pointed stick, so that the roots may be in contact with firm turfy peat that you may press firmly round them with a blunt stick. Perhaps the same sized pot will do, or one very slightly larger. Water must be given with judgment, avoiding the extremes of periodical over-dryness and saturation. The temperature is suitable, but the plant will be better on a close base than a latticework stage, especially if this is over hot-water pipes. *Coleuses* are stove plants, and if you cannot contrive to affix a case or frame over the heating medium

for insuring a temperature of about 60°, you cannot preserve the plants. If you can maintain a temperature of 65° now in a case, you can insert cuttings for rooting, and throw the old plants away.

Pear Tree not Blossoming—Greasing Tree Stems (*Perskore*).

—As the tree has evidently made good growth—indeed has probably grown too luxuriantly—we should dig it up carefully and transplant. By well undermining a good amount of soil can be removed with the roots. All those of a fibrous nature should be preserved, and the longer, which may be cut through with a spade or broken, should have the ends pared smooth with a knife. If you can procure some lime rubbish and wood ashes for mixing with the soil, do so, and press it firmly round the roots, and cover the surface with not very much decayed manure. We should transplant as soon as most of the leaves can be shaken or rubbed off. If the branches are crowded some of them may be cut out entirely, not shortening those which remain, and the tree should have the support of three stout stakes fixed triangularly, with padding between their tops and the stem to prevent abrasions of the bark. We do not recommend the application of any glutinous composition to the stems of trees, but only to stout paper or other material tied round them. What you have used may not do harm, but we know that harm has been done by the practice suggested, and we endeavour to advise safe methods. Read what Mr. S. T. Wright says on page 266, the issue of the 27th ult., on this subject.

Planting Yews and Hollies (*J. E.*).—Some shrubs fail no matter when they are planted, through not being in proper condition for removal. We have seen hundreds of large shrubs purchased at a low price, the possessors having been not a little jubilant in getting so much for their money. The evergreens had remained crowded and unmoved for years. As a consequence, though tall, they had few roots, and these not of a fibrous character; moreover, they were dried by exposure between the time of taking up and planting. Such examples are bound to fail. They are supposed to produce an "effect at once," and they do, but it is not very good to begin with, and in a few weeks or months decidedly bad, for they die. Yews and Hollies with an abundance of bushy fibrous roots through periodical transplanting in well managed nurseries—shrubs the very opposite in character of those above described—will grow well if properly planted in moist well worked soil, either in the autumn or the spring, though they may require to be watered and syringed afterwards if very dry weather should prevail. Large, so-called "cheap," shrubs are usually the most costly in the end. If we desired to plant a number of Yews and Hollies we should order them from a good nursery forthwith, expect the roots to be moist on arrival, and they would be planted at once. If the soil were dry we should take care to make the sites thoroughly moist before planting, also immediately afterwards give a good watering. Midwinter planting, when the ground is very cold, is not so reliable as spring planting when the buds commence swelling. We have planted numbers of the evergreens mentioned at the end of October without a failure, and many of a large size proportionately well rooted, the taking up and planting having been well done, and proper attention accorded afterwards; and we have had equal success in spring, but with more after attention, for not one out of a hundred has died. The mere "time" of planting is only one factor, and not the most important, the condition of the shrubs, soil, and methods being of greater moment in accomplishing the object in view.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*F. Jellico*).—The Apples are all Cox's Orange Pippin. The Pear, probably Browne Beurré; you are right about the specks. (*H. W.*).—1, Comte de Lamé; 3, Van Mons Leon Le Clerc. (*C. B.*).—1, Red Doyenné; 2, Beurré Superfin; 3, Maréchal de Cour; 4, Marie Louise; 5, Bonne d'Ézée; 6, Beurré Six. (*P. & Co.*).—1, Brown Beurré; 2, Easter Beurré; 3, Chaumontel; 4, Bergamotte Espéren; 5, Marie Louise; 6, Beurré Diel. (*Inquirer*).—1, Worcester Pomeroy; 2, Lord Derby; 3, Beurré Hardy; 4, Golden Reinette; 5, Tower of Glamis. The Plum is Cox's Late Red. (*Golden Haymaker*).—As you may perceive above, only six specimens can be named at once, and we have the best of reasons for making no departure from that rule. Moreover, probably some of the Apples you send are local. The six we recognise are—2, Betty Geeson; 3, Scarlet Nonpareil; 5, Golden Noble; 9 and 12, Rymer; 11, Dumelow's Seedling; 13, Mère de Ménage.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Satisfactory*).—Your plant is a *Tillandsia*, perhaps *T. setacea*, but the flowers were too much withered to be recognisable. (*Amateur*).—1, *Salvia rutilans*; 2, *Salvia ianthina*; 3, *Salvia involucrata*; 4, *Salvia splendens*; 5, insufficient, no flowers sent; 6, *Panax laciniatum*. (*A.*).—*Begonia ferrea*. (*Mrs. Keane*).—The plant is *Coccoloba platyclada*, which requires to be grown in a greenhouse; in warm situations it would no doubt succeed out of doors. (*G. R.*).—1 and 2, Varieties of

Adiantum cuneatum; 3, *Adiantum concinnum*; 4, *Asplenium formosum*; 5, *Adiantum trapeziforme*. (*A Constant Reader*).—It is somewhat in the way of Mrs. Hawkins, and is worth keeping.

COVENT GARDEN MARKET.—OCTOBER 23RD.

MARKET well supplied with all classes of goods, with the exception of Apples, which have been in good demand at better prices. The first consignment of Nova Scotia Apples is on the road, and expected to be sold this week.

FRUIT.

	s. d.	e. d.		s. d.	e. d.
Apples, ½ sieve ..	2	0 to 7	Oranges, per 100 ..	4	0 to 9
„ Nova Scotia and	0	0	Peaches, dozen ..	2	0 to 8
Canada, per barrel	0	0	Plums, ½ sieve ..	3	0 to 4
Cherries, ½ sieve ..	0	0	Red Currants, per ½ sieve	0	0 to 0
Grapes, per lb. ..	0	6	Black „	0	0 to 0
Lemons, case ..	10	0	St. Michael Pines, each	2	0 to 6

VEGETABLES.

	s. d.	e. d.		s. d.	e. d.
Artichokes, dozen ..	4	0 to 5	Lettuce, dozen ..	0	9 to 1
Asparagus, bundle ..	0	0	Mushrooms, punnet ..	1	6 to 2
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet	0	2 to 0
Beet, Red, dozen ..	1	0	Onions, bushel ..	3	0 to 4
Broccoli, bundle ..	0	0	Parsley, dozen bunches	3	0 to 3
Brussels Sprouts, ½ sieve	1	6	Parsnips, dozen ..	1	0 to 0
Cabbage, dozen ..	1	6	Potatoes, per cwt. ..	4	0 to 5
Capicums, per 100 ..	0	0	„ Kidney, per cwt.	4	0 to 7
Carrots, bunch ..	0	4	Rhubarb, bundle ..	0	2 to 0
Caniflowers, dozen ..	2	0	Salsify, bundle ..	1	0 to 1
Celery, bundle ..	1	0	Scorzonera, bundle ..	1	6 to 0
Coleworts, doz. bunches	2	0	Shallots, per lb. ..	0	3 to 0
Cucumbers, each ..	0	3	Spinach, bushel ..	1	0 to 2
Endive, dozen ..	1	0	Tomatoes, per lb. ..	0	4 to 6
Herbs, bunch ..	0	2	Turnips, bunch ..	0	4 to 0
Leeks, bunch ..	0	2			

CUT FLOWERS:

	s. d.	e. d.		s. d.	e. d.
Arm Lilies, 12 blooms ..	3	0 to 6	Lilium longiflorum, 12		
Asters, per bunch, French	0	0	blooms ..	3	0 to 6
„ „ „ „ „ „ „ „	4	0	Maidenhair Fern, doz.		
Bouvardias, bunch ..	0	6	bunches ..	4	0 to 9
Camellias, dozen blooms	2	0	Marguerites, 12 bunches	2	0 to 6
Carnations, 12 blooms ..	1	0	Mignonette, 12 bunches	2	0 to 4
Chrysanthemums, dozen			Myosotis or Forgetmenots		
blooms ..	1	0	doz. bunches	1	6 to 3
Chrysanthemums, dozen			Pansies, dozen bunches ..	0	0 to 0
bunches ..	2	0	Pelargoniums, 12 trusses	0	6 to 1
Clove Carnations, 12 bunches	0	0	„ „ „ „ „ „ „ „	3	0 to 6
Cornflower, doz. bunches	1	0	„ „ „ „ „ „ „ „	0	0 to 0
Dahlias, dozen bunches ..	2	0	Pinks (various) 12 bunches	0	0 to 0
Encubias, dozen ..	3	0	Poppies, various, 12 bunches	0	0 to 0
Gaillardia picta, 12 bunches	2	0	Roses (indoor), dozen ..	0	6 to 1
Gardenias, 12 blooms ..	3	0	„ Mixed, doz. bunches	3	0 to 6
Gladioli, per bunch ..	0	6	„ Red, dozen bunches	6	0 to 12
Gladioli brecheleyensis,			„ „ 12 blooms ..	0	9 to 1
dozen sprays ..	1	0	„ Tea, white, dozen ..	1	0 to 3
Helianthus, or Sunflower,			„ Yellow ..	2	0 to 4
dozen bunches	3	0	Spiraea, dozen bunches ..	0	0 to 0
„ large, dozen blooms	0	0	Stephanotis, doz. sprays	3	0 to 5
Lapageria, 12 blooms ..	1	0	Sweet Peas, doz. bunches	2	0 to 4
Lavender, dozen bunches	0	0	Sweet Sultan, „	0	0 to 0
Lilium anatum, 12 blms	0	0	Tuberose, 12 blooms ..	0	6 to 1
			Violets, dozen bunches ..	1	0 to 2

PLANTS IN POTS.

	s. d.	e. d.		s. d.	e. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Fuchsia, per dozen ..	3	0 to 9
Arum Lilies, per dozen ..	0	0	Geraniums, Ivy, doz. ..	0	0 to 0
Arbor vitae (golden), dozen	6	0	Hydrangea, per dozen ..	9	0 to 18
Asters, 12 pots ..	3	0	Lobelias, per dozen ..	0	0 to 0
Begonias, various, per doz.	4	0	Marguerite Daisy, dozen	6	0 to 12
Balsams, per dozen ..	0	0	Mignonette, per dozen ..	0	0 to 0
Caladiums, per doz. ..	0	0	Musk, per dozen ..	0	0 to 0
Calceolarias, per dozen	0	0	Myrtles, dozen ..	6	0 to 12
Chibritas rose ..	0	0	Nasturtiums, per dozen ..	0	0 to 0
Chrysanthemums, dozen	6	0	Palms, in var., each ..	2	6 to 21
Cockscombs, per dozen ..	3	0	Pelargoniums, scarlet, 12	2	0 to 4
Dracena terminalis, doz.	24	0	Rhodanthus, per dozen ..	0	0 to 0
Dracena viridis, doz. ..	12	0	Roses, (Fr.), per bunch ..	2	0 to 3
Erica, various, dozen ..	12	0	Saxifraga pyramidalis,		
Enonymus, var., dozen	6	0	per dozen ..	0	0 to 0
Evergreen, in var., dozen	6	0	Solanums, per dozen ..	6	0 to 12
Ferns, in variety, dozen	4	0	Violets (Fr.), per bunch ..	1	6 to 2
Ficus elastica, each ..	1	6	White Lilac (French), per		
Foliage plants, var., each	2	0	bunch ..	6	0 to 7



THE FLOCK IN WINTER.

AMONG our Michaelmas plans for the ensuing twelve months none are more important than those made for the management of the flock during winter, for it includes the most critical and important season of all, the lambing, when due care and forethought may enable us to avoid all but casual losses, and obtain a full crop of healthy lambs.

The popular notion that a certain per-centage of losses both of ewes and lambs was inevitable is now pretty well exploded, and it may be laid down positively that given strong healthy ewes that are not over age, losses should be the exception. Such a flock last season gave us rather over an average of a lamb and a half per ewe, not a lamb being lost, the only casualty being the loss of a ewe. This satisfactory result was, of course, owing in some measure to good management during the lambing, but it was very much more an outcome of intelligent care the year round, and especially in winter. Let us see what is best to be done for the ewe flock for the next three or four months.

The period of gestation for a ewe is twenty-one weeks, so that if the tups were turned in the first week in September the first lambs may be looked for about the last week in January. From the present time, therefore, the ewes are to be considered as pregnant, and especial care must be taken to guard them from being hastily driven. The shepherd's dog should always be used quietly, and strange dogs kept off. Many a flock has sustained serious injury by dogs breaking in at night, and we have more than once had reason to wish that the gypsies' lurchers could be put down by law, for many a flock has been sadly harrassed by them at night. It is for this reason that the ewes should always be driven near home or into a secure enclosure at night. Perhaps the home farmer runs less risk of harm from such a cause than others, as he has the advantage of a park with a wall or high fence.

The folding of pregnant ewes upon arable land if done at all should be during the first two months of pregnancy, and then only upon tolerably sound land. With care there need be no harm done to the ewes by folding upon early Turnips or Mustard, and the land is then ploughed at once for winter corn. A little dry food should also be given in troughs regularly during the folding, both to keep up condition and prevent scouring. If this is given regularly a little while before changing folds there will be no difficulty in getting them to eat it. Chaff given alone will not be touched if the sheep have access to plenty of fresh green food, but if mixed with crushed Oats and a little bran it will be eaten. In all trough-feeding only enough should be given to be cleared up at once, and the troughs should always be kept free of stale food or other filth. If the weather becomes so wet that the soil becomes sodden and very muddy in the folds the ewes should be withdrawn to sound pasture, and the folding be left to the hoggets. As was mentioned last week, our ewes are now in the park feeding solely upon the grass and acorns. They are in high condition, and should bring fine healthy lambs if only they have wholesome food and kindly treatment in December and January. It is then that so much harm is often done by injudicious feeding and folding upon arable land. It surely requires only ordinary intelligence to grasp the fact that a dietary consisting principally of cold, often half frozen, roots containing 80 per cent. of water must tax the system seriously by the frequent reduction of temperature and the little nourishment derived in proportion to the food consumed. In addition to this there is the heavy strain in walking upon land which has been churned into a mud puddle and become so tenacious that the feet can only be withdrawn with difficulty. It is true enough that strong young ewes will often bear all this with impunity, but there is usually a heavy per-centage of losses in flocks subjected to such treatment. We hold that such exposure of sheep or any live stock to the risk of health, simply because they can endure it, is decidedly a mistake from a commercial point of view. How can we expect animals to thrive if we allow health and strength to be taxed so severely?

When pasture comes to be cultivated as thoroughly as arable land most farms will then have enough sound dry pasture to carry ewes in winter. If they are taken upon this in December and fed according to the weather with what trough food, with Pea and Oat straw in racks may be necessary, they will require no roots. In January a few Mangolds or Cabbages may be given daily with advantage, but all Swede or other Turnips should be held in reserve

till after the lambing. There will then be no risk of losses by abortion, which do undoubtedly arise from the causes we have mentioned. A shepherd should have no latitude in this matter; he must either yield implicit obedience or be sent about his business. A little tact and firmness should enable one to avoid extreme measures, but the health of the sheep must not be allowed to suffer through ignorance or obstinacy.

[By an error of the printer "Salvator or Mountain Ash" Wheat appears in the second paragraph of the Home Farm article last week, page 346. It should have been "Salvator or Mountain White."]

(To be continued.)

WORK ON THE HOME FARM.

Never was there a better provision of food upon the farm for live stock. Hay and stover of the best quality, an abundant crop of roots, Cabbage, and Kale, plenty of straw of all kinds, to say nothing of silage, which now takes a leading place upon many a farm. The layers for another year are full of plants, and autumn sown green crops, such as Trifolium, Rye, Winter Oats, and Tares, are all up and growing freely. Late Turnips have been sown more extensively than usual, and there will be plenty of such food in store for lambs next spring. Turnips are so plentiful that we are assured by a large flockmaster he is offered as many acres as he requires for some 7000 sheep free of cost. Farmers will thus get their land manured in readiness for spring corn, but we greatly deplore such evidence of a want of capital by so many farmers to purchase sheep for their own requirements. There is undoubtedly a scarcity of sheep among tenant farmers, and capitalists have seized the opportunity to purchase sheep and put them out to feed among needy farmers. The high price of sheep in this country has not escaped the attention of the foreigner, and importations are on the increase, considerable consignments coming from Norway, and we have even heard of some useful consignments from Lapland.

Dairy cows still have an abundance of grass, and the butter retains the high colour and full flavour of summer. There is no doubt that much good is being done by dairy schools and butter-making contests. We approve of a recent suggestion that trained dairymaids, or some of those young ladies who lecture so charmingly and demonstrate so clearly upon butter making, should be engaged by farmers to visit their dairies and inspect and advise what is best to be done under the peculiar conditions existing at each farm. We have no doubt much good might be done in this way, but we fear many a worthy farmer's wife will be slow to comprehend the value of granular butter. We were recently assured by a keen commercial man that good butter was very much owing to climate. No doubt some such ideas, or mere carelessness and prejudice, hinder the progress of dairy reform among those most interested in it, and yet it is all so very simple, and there is no insuperable difficulty in the way of making really good butter anywhere in this country.

COMPETITION FOR MALTING BARLEY.—We are requested to insert the following paragraph:—There is a large competition at the Brewers' Exhibition, London, this week for the valuable prizes offered for Malting Barley. The Champion Cup, open to the world, as well as first, second, and third prizes, have been won by Webbs' Kinver Chevalier Barley. This is the third year in succession that this variety has won the premier honours at the Brewers' Exhibition. Webbs' Kinver Chevalier Barley was introduced by Messrs. Webb & Sons, The Queen's Seedsmen, Worsley, Stourbridge.

METEOROLOGICAL OBSERVATIONS.

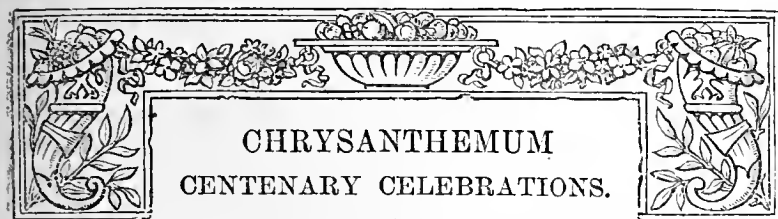
CAMDEN SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. October.		Baromet- er at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
Sunday	13	29.806	deg.	deg.	Calm.	deg.	deg.	deg.	deg.	deg.	Ir.	
Monday	14	29.972	40.3	40.0	S.E.	48.0	57.9	35.5	84.9	32.4	—	
Tuesday	15	29.972	34.7	38.7	S.E.	47.7	56.9	34.9	79.3	32.3	—	
Wednesday	16	29.954	45.5	45.3	S.E.	49.9	59.2	37.1	94.2	31.8	0.025	
Thursday	17	29.763	57.3	55.8	S.E.	48.6	60.6	44.3	70.7	42.8	0.442	
Friday	18	29.797	47.2	46.4	W.	50.0	58.4	42.9	95.0	39.4	—	
Saturday	19	29.689	45.5	45.1	E.	49.4	56.6	41.2	63.3	31.5	0.081	
		29.163	50.9	49.2	E.	49.7	52.8	48.7	57.8	45.5	0.726	
		29.750	43.5	45.8		48.6	57.5	41.1	77.6	37.9	1.274	

REMARKS.

- 13th.—Fine and generally bright, a little misty early and in the evening.
 14th.—Foggy early, fine bright day, fog again in evening.
 15th.—Fog till 9 A.M., then fine and bright with solar halo about midday; cloudy after 2 P.M.
 16th.—Cloudy, with occasional sunshine till 4 P.M., then very wet till 10.30.
 17th.—Generally bright, but cloudy at times in afternoon.
 18th.—Foggy early; fair day; rain after 10 P.M.
 A very ordinary week, terminating, however, with a sharp fall of barometer, and heavy rain on Saturday night and Sunday morning.—G. J. SIMONS.



MANY erroneous statements have appeared at different times with regard to the introduction of the Chrysanthemum to England, and these divergencies are undoubtedly due to the paucity of early reliable records bearing upon the matter. Like many other plants of eastern origin the Chrysanthemum had been cultivated in the eastern part of Asia, more particularly in China and Japan, for many years, perhaps centuries, before it became known to Europeans, and then its existence was first recorded in botanical works. During the seventeenth century the Dutch were foremost amongst commercial navigators, and their merchants were in frequent communication with the East Indies, the larger islands of the Indian Archipelago and neighbouring regions, probably occasionally even with China and Japan, though ports in those countries were then very difficult of access. Amongst the various natural and artificial products imported to Europe by this means it was quite likely that plants would be included, and we know this actually to have been the case with some now familiar occupants of our gardens. There is a strong probability that the Chrysanthemum thus originally found its way to Holland, at least the earliest known references are in Dutch works of the years 1689 (Breynius) and 1690 (Rheede), and from these it appears that varieties with differently coloured flowers were then cultivated. Respecting these introductions our information terminates with the records named, and no further facts are forthcoming; indeed the plants disappeared, and nothing further is heard about them in cultivation for a hundred years. Botanists and travellers had, however, been busy in the meantime, and Kämpfer, Rumphius, Linnæus, and Thunberg all described the plant, under various names it is true, but it was comparatively easy to identify them all with the Chrysanthemum indicum of Linnæus, which became its accepted name.

We learn on the authority of Aiton's "*Hortus Kewensis*" (second edition, 1813) that about the middle of the eighteenth century a variety of Chrysanthemum indicum was cultivated by Miller in the Apothecaries' Garden at Chelsea (1764), and a specimen was preserved in the official herbarium, though the plant was lost. Some discrepancies between the description and the specimen throw a little doubt upon the identity of the plant with the C. indicum of Linnæus, but there is no question that it was subsequently lost, and like the earlier introduced varieties in Holland, totally disappeared from gardens. It is also clear the plant was unknown at Kew when the first edition of the "*Hortus Kewensis*" was published (1789), for it is not included in that work.

The next introduction of which we have any record is said to have occurred in 1789, a Monsieur Blancard of Marseilles being credited with the importation into France of several varieties described by M. Ramatuelle as *Anthemis grandiflora* in the *Journal d'Histoire Naturelle*, vol. ii. page 237. Mr. Sabine, Secretary of the London Horticultural Society, in 1822, published in the *Transactions of the Society* named (vol. iv.) a list of the varieties then known, with particulars of their origin, and a brief history of the Chrysanthemum, to which (with Mr. Salter's book) subsequent writers have been largely indebted for their materials. In that paper it is said some varieties of Chrysanthemum were introduced to France by M. Blancard in 1789, and that in the following year (1790) plants of the purple variety, the only one preserved, were sent to the Royal Gardens at Kew by M. Cels of Paris, and thence distributed in England. We thus have the two dates upon which the centenary celebrations of the present and next year are founded.

The progress of the flower from the period named becomes a matter of history, concerning which much has been written, but no complete and satisfactory record of its advance during the past fifty years has yet appeared. It is only within the later half of that time that really rapid progress has been made, and regarding the Chrysanthemum collectively in all its sections it is unquestionably greatly superior to what it was a quarter of a century ago, when some thought its popularity was declining, and neglected it for fresh favourites. The progress of recent years has been almost entirely due to British cultivators, who have produced the best examples of their skill and entered in competition with each other at the exhibitions which have so greatly increased in numbers. No history of the Chrysanthemum can be regarded as satisfactory that does not do full justice to those who have really proved to the public the beauties and capabilities of the plant, and without their aid the continental raisers would have received but little encouragement to proceed in their work. As it is the latter have annually left much for our nurserymen to do in the selection of really good novelties from the extremely numerous seedlings sent here with elaborate descriptions of their charms. To the firms that have introduced varieties direct from Japan we are much more indebted, as these have formed very distinct types. Raisers of seedlings in England have done good and useful work; critical selectors, and those who have observed and fixed distinct sports, have all assisted in the advance; while many firms in town and country who make specialties of Chrysanthemums and provide annual displays, have all helped in the popularisation of the plant. Then, too, the public shows in the Temple Gardens and Finsbury Park, and more recently in the Victoria, Southwark, and Battersea Parks, are bringing the Chrysanthemum into more prominent notice. Lastly, the writers of books and contributors to the Press have performed valuable service in rendering the usefulness and beauty of the plant more widely known, and in the support of the societies devoted to its encouragement. We thus have four agencies that have shared in the development of the Chrysanthemum to its present stage of beauty and popularity—the introducers and raisers of new varieties who have furnished the material; the amateur, professional, and trade exhibitors, who have grown and displayed them to the best advantage; the societies that have provided prizes and other honours to promote competition; and the writers who have published their experiences and extended the interest in the flower by records of events, advances, and successes. All these agencies should have due representation and recognition in any centenary celebration of so popular a plant.

Some societies have considered the present year as the most fitting for a celebration of this kind, although next year would be more appropriate as the centenary of the year when the Chrysanthemum appeared in England; and this view has been taken by the National Society, which reserves its Special Fête and Conference for 1890. It is, of course, quite open for any European country to celebrate the centenary this year, and the Royal Horticultural Society accordingly lead the van with a Conference and Exhibition at Chiswick next Tuesday and Wednesday, November 5th and 6th, to which many are now looking forward with considerable curiosity and interest. Some of this Society's former influence is returning under a spirited system of management, and it is doubtful if any other Society in the world could have accomplished such results in one year as the Temple Show, the Rose, and Vegetable Conferences, without the aid of money prizes. Perhaps a little too much has been attempted, but that is better than the policy of inactivity so long pursued, and it may be con-

fidently expected that the Chiswick gathering will not be wanting in importance and utility.

On another page particulars of the Conference programme are given, and with such a range of subjects well treated, as they unquestionably will be, there should be amply sufficient to attract lovers of the Chrysanthemum for an hour or two on each day. The schedule is a comprehensive one, but it is probable that some sections, especially those for trained specimen plants, will be rather inadequately represented. The conveyance of plants is an expensive matter, and while few gentlemen will care to become responsible for the cost, still fewer gardeners can afford to do so themselves. With regard to the cut blooms the matter is somewhat different, as a few boxes of blooms are not a very serious impediment to a traveller, nor is the carriage a heavy item. We may, therefore, hope to see some exhibitors indicating their willingness to assist in extending the display by contributing from their floral treasures. The practical usefulness of the Selecting Committee's work will mainly depend upon the number of good blooms submitted to them, for partial or restricted selection will be of little value.

At Birmingham, on November 20th and 21st, the ordinary Exhibition will be held, but to give it a special significance this year a class has been provided for forty-eight blooms—twenty-four incurved and twenty-four Japanese, distinct, with six prizes, ranging from £25 to £1 10s. It is also stated in our advertisement columns that the Exhibition "will be opened by Sir Thomas Martineau, when songs on the Chrysanthemum, specially composed for the occasion, will be sung by over 200 voices."

Edinburgh will celebrate the centenary with "an international Show," held by the Scottish Horticultural Association, on November 21st, 22nd, and 23rd. The leading classes are for forty-eight Japanese blooms (not less than thirty-six varieties), the City of Edinburgh cup, value £20, being offered as the first prize; and for thirty-six blooms, comprising twelve Japanese, distinct, twelve incurved in not less than nine varieties, and twelve Japanese reflexed in not less than nine varieties, the Scottish challenge cup and five guineas constituting the first prize.

At Ghent a centenary celebration will be held by the Société Royale d'Agriculture et de Botanique, from November 24th to December 1st, when gold, silver, and other medals will be offered in a large number of classes, miscellaneous Chinese and Japanese plants being also provided for. A deputation of members of the National Chrysanthemum Society's General Committee, comprising Mr. William Holmes, Mr. George Gordon, Mr. Lewis Castle, Mr. C. Harman Payne, and Mr. B. Wynne, has been appointed to visit this Show, as the most representative continental centenary display.

It is surprising that in connection with these various exhibitions so little attempt has been made to secure any features of an original character. Exception must, however, be made of the Chiswick and Ghent affairs, as they are both distinctly out of the ordinary exhibition lines, so far as can be judged from the programmes issued. In both these cases it has been attempted to impart more than mere show interest to the gatherings, and this is what is needed. Conferences are assisting in rendering shows somewhat more than a struggle for so many prizes and challenge vases, and there is still room for the National Society to make its celebration in 1890 distinct from all that will have preceded it.

PROFITABLE FRUITS.

THE MORELLO CHERRY.

LET me commend this Cherry to all on the look out for what is best to grow in the way of hardy fruits for either home consumption or for marketing purposes. There are several points in its favour, two especially good ones being the fact that the trees very rarely fail to bear well, it may be in positions where no other fruit could be so profitably grown, and the crops are always easy to get rid of at a good price. When the leading salesmen in Covent Garden Market have to send hundreds of miles for Morellos, paying, in addition to the cost of carriage, from 10d. to 1s. per

pound for sound fruit, we may safely assume there is both a good demand for it and a deficient supply. In this district there is no necessity to go far afield for purchasers, as the produce can always be readily sold at about the figures already given, the prices very seldom falling lower than 10d. From experience gained in other parts of the country, and a few facts gleaned from correspondents, much the same state of affairs prevails in most other localities, the supply not, as a rule, equalling the demand. This being so, the wonder is that comparatively few trees are planted, and so little is heard of the value of the Morello as a hardy market fruit. Why they are so little grown in other than the metropolitan districts may perhaps be due to the impression that they must be trained against cool walls, when in reality they succeed admirably as half standards and pyramids, the only real difficulty being to preserve the fruit from birds.

Those having high walls with cool aspects, or any, say facing north, north-east, or north-west not at present profitably utilised, ought to cover these with Morello Cherries as quickly as possible, whether the surplus or whole of the fruit is to be marketed or not. Unlike many other fruits Morellos are not quickly perishable, their season extending from August to November inclusive, and, in addition to being attractive as a dessert fruit, are particularly esteemed in pies, and also when preserved whole in brandy. Especially would I advise cottagers who occupy old-fashioned houses to procure trees, or any with cool walls which they may venture to drive nails into, though even this difficulty of driving nails into expensive walls, where it occurs, may be obviated by wiring the space. Within four miles of where I am writing there is a large Morello tree, owned by a garden labourer, that annually produces sufficient fruit to realise what has to be paid for rent, which, however, it must be added, is much below the average of most districts. His employer invariably takes the whole of the fruit, and this season 30s. was paid for it, but as much as £2 has been made of the fruit in one season, the quality and weight of the crop being exceptionally good. It is choice fruit now-a-days that sells the most readily at highly remunerative prices, and those who are anxious to succeed in profitable fruit culture ought to pay more attention to the clothing of every blank space—not necessarily garden walls—with trees of superior kinds and varieties. I would strongly advise the owners of cottages, notably the older and roomy structures, to provide the occupiers with young trees, Morello Cherries included, and see that they are properly treated and cared for. In time they will become a source of profit to the tenants, and add greatly to the letting value of the houses.

I hold the Morello to be amongst the most easily grown of all fruit, and this, whether located in the open or against a high or moderately high wall. They rarely form any extra strong or gross shoots, an even well-balanced head being easily secured, and if well fed at the roots they attain a great size and last for many years. At the outset a good border extended to at least 4 feet from the walls should be formed, and principally of good turfy loam with an addition, if need be, of a third or more of good garden soil. Although it delights in a cool position the trees do not thrive long after the roots reach a clayey subsoil. Where clay, therefore, is found within 18 inches of the surface, not less than 9 inches of the subsoil should be removed, and a layer of rough stones or brick ends faced over with old mortar rubbish be substituted, on this being placed 2 feet of the loam or compost prepared. Especially is it necessary that the site be well drained; and in very low lying positions, where the drainage is sometimes unavoidably defective, the trees ought to be, in fact must be, planted in a border raised considerably above the ordinary level of the garden. If the wall is high, or say 10 feet and upwards in height, the quickest way to furnish the space is to plant both dwarf and standards, the latter being known as "riders," and these eventually have to be removed or cut away in order to make room for those with short stems planted between them. A healthy tree well cared for is capable of covering an immense amount of wall space, one that I have seen in Kent being of such a size and so well furnished with bearing wood as to occupy one man's time for not less than four days in pruning and training every winter. As a rule the dwarf trees should be planted about 18 feet apart, the riders, if any, being disposed midway between them. Maiden trees in addition to being much the cheapest also take most quickly to their fresh quarters, and soon surpass older trees planted at the same time. These must be cut back once, or perhaps twice, in order to obtain the requisite number of branches for laying the foundation of the trees, after which all that is necessary is to lay in main branches wherever there is room for them, the young wood for fruiting the following season being reserved every summer and trained or fastened to the walls in the winter, taking the place in many instances of old bearing wood cut out. When trained trees, or those with seven or more main branches, are purchased and planted, and which is most frequently done, it is unwise to shorten these

in any way. Laid in to their full length, exactly as they were previously trained, they will attempt to fruit the same season, but this must be prevented, as it is young wood that is required. In the second year after planting they may be allowed to bear a few fruit, and every following year the crops will increase in weight.

Standard trees are still less trouble as regards pruning and training, and pyramids also, when once a good foundation has been laid, are not difficult to manage. The former ought to be on the common Cherry stock, and the latter is also preferred by me for wall trees. If dwarf bushes or pyramids are preferred, these ought to be worked on the Mahaleb stock. The ground for either of these should be equally as well prepared, or much as advised in the case of wall trees. Free growing standards to be disposed 20 feet apart each way, pyramids 10 feet, and those to be root-pruned or otherwise restricted 6 feet apart. At first all must be freely pruned in order to frame out the tree, but subsequently the treatment consists merely of thinning out the young shoots in the summer and cutting out old wood in the winter, young well ripened growths producing flowers and fruit in abundance.

Where so many err in their treatment of well established Morello trees is in imagining these will go on doing well for any length of time, whereas they require liberal root culture, otherwise the crops will be poor in quality and a collapse be the eventual and perhaps early result. Mulchings of manure and fresh loam, or the former alone, will serve to keep the roots active near the surface, but even this alone is not sufficient, and it is advisable to occasionally open a wide deep circular trench at about 8 feet from the stem of a large tree, filling this with and relaying the roots that were forked out of the old soil and preserved in a good loamy compost. All fruit trees delight in turfy loam, and none more so than Morello Cherries. Cottagers and many gardeners are not in a position to give their trees fresh loam, or indeed much solid manure in the way of surface dressings or mulchings, but they can adopt the plan of the old cottager previously alluded to as a successful grower of Morellos. During the winter he loosens the surface of the ground as far as the roots spread, and frequently empties the drainings of his pigstye over the border, sewage also going the same way. His long experience has told him that strong liquid manure would be ruinous to trees if applied when in full leaf, but during the winter it may be used safely and with the best possible results.—W. IGGULDEN.

TWO GOOD HARDY CLIMBERS.

ONE oftentimes sees inquiries about hardy climbers, and amidst the numerous additions of late years to our catalogues it is not difficult to select some which may answer all purposes. There are many purposes for which they are used, and many and various kinds of buildings for which they are adapted. Some, like the Passion Flower, are hardy in certain parts of these islands, and are grown on account of the beauty of their flowers. There are, again, others whose claim to favour depends entirely on their foliage. I am not going to enter upon any quasi scientific statement as to twining, climbing, and trailing plants, but everyone will recognise the fact that plants differ very much in their method of climbing, while some which have the name of climbers given to them have really and truly no claim whatever to the title. Some plants, like the Vine, put out thread-like tendrils with which they lay hold of anything with which they come in contact; others, like the Ivy, throw out little suckers with which it clings to walls and trees. There are others which, like the Bindweed, throw their stems bodily round anything that they can, and all who have to do with that very hardy and persistent weed know how difficult it is to disentangle it from the plant on which it has bestowed its attentions, while there are others which are no climbers at all, but merely rampant growers. Thus we see in most catalogues "climbing Roses" as a distinct section, and then amongst the Hybrid Perpetuals we see now and then a climbing Captain Christy, climbing Charles Lefebvre, &c., while in truth they have no tendency to climbing. Let any of them be planted where they could climb if they possessed the power, and we all know that without artificial aid they would speedily be all over the place. It cannot be otherwise. They have none of the appliances for climbing, and are simply those Roses which are specifically of a rampant habit, or those in which some vigorous shoot has been developed and the character of the growth been altered, more frequently by some influence of the stock. It is a misnomer, but like a great many things of the same kind, will no doubt hold its way, just as nothing will ever alter the absurd distinction of Show and Fancy Dahlias. And now for my two climbers.

AMPELOPSIS VEITCHI. — The honoured name of Veitch is attached to many plants of the most varied character, for that enterprising firm pushes its researches into all parts of the world,

while the scientific hybridising practised in their nurseries has added many a delightful flower to our lists, but I question very much whether there is one plant amongst the many bearing their name which will longer perpetuate it than this very useful climber, and although it has synonyms, being known as *A. tricuspidata* and *Vitis japonica*, yet the one by which it is usually known is that given to it here. Unlike the ordinary Virginian Creeper, it throws out little suckers, which cling closely to the wall, and so enable it to extend itself, and how varied its uses, and how happy it seems to be in any position. No one who knows the suburbs of our large towns will fail to recognise its usefulness in covering smoke-coloured brick walls. It also luxuriates in the pure air of the country. How beautiful it is covering the fine mansion of Mr. Llewelyn at Penllergare in South Wales, while all your readers will no doubt be able to call to mind many equally charming effects in other places, but I question very much whether anyone has quite utilised it as I have done. My church, which inside is one of the most beautiful and interesting of our Kentish churches, has walls which were never of any great beauty. They were built, as many in those days (A.D. 1250) were, of rubble, and hence, when the church was restored five years ago, I was desirous of covering them. I was afraid to use Ivy, as it has such an unpleasant way of getting in amongst and disturbing the drainage, so I planted on the south side some plants of *Ampelopsis*. I did not want to have anything that required nailing. The plants grew, and in course of time one of them spread itself over one of the windows. The church is very light inside, so the shade of this was not unpleasant, and when in the autumn it changed to the most brilliant scarlet, it gave all the appearance of painted glass when looked at from the inside. I hope it will not in any way injure the stonework of the window, for as it is deciduous the leaves will all be off before the heavy rains of winter set in. Should, however, I find that it is likely to do so it can be readily removed or cut away.

CLEMATIS MONTANA. — This is the other climber in favour of which I would like to write a word. In this neighbourhood it has been very largely used, and always with the best effect. The front of my house faces west-north-west, and consequently it is very difficult to get anything to grow sufficiently well to cover the walls. I tried Roses, but they were not a success. Madame Trifle and others of the Dijon section made growth indeed, but it was a straggling and bare growth, and they did not flower sufficiently well to compensate for their bad habit, so that seeing the very successful manner in which this plant had been used at one or two houses in my neighbourhood I planted one. It has now covered nearly one half of the front of the house, and in another year or so will cover the other half. I suppose that it would not be hardy in all parts of our island, and its native habitat, Nepaul, whence it was introduced in 1831, is probably suggestive of a certain amount of tenderness, but here in Kent it seems to stand the severest winters. There is one large house in this neighbourhood which is entirely covered with it, and it has stood there for a great many years. The foliage is very neat, so that even when not in flower it is pretty, and when in flower it is a sight which ought to, and does, delight all lovers of simple beauty; the pure white star-shaped flowers suggesting an enlarged Wood Anemone, are very abundantly produced, and nothing in its way can exceed the beauty of a plant well grown when in full bloom. Daily when I come in from parochial rounds have I stood in front of the house admiring its marvellous and simple beauty.

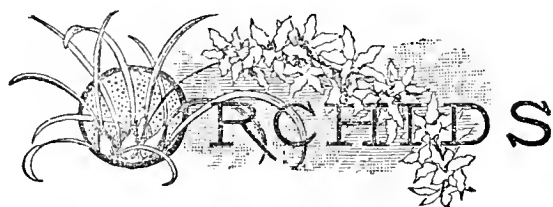
It will be seen that I have not been drawn away by any new fangled beauty in recommending two good hardy climbers. Probably others may suggest something they think to be better, but I simply record personal experience, and hope that if any of the readers of the Journal know of anything better they will kindly give us the benefit of their experience.—D., Deal.

THE BISMARCK APPLE.

As but little is known of this remarkable new Apple which is now attracting great attention, I venture to give a few particulars which may interest your readers. It is from Australia, and is there known as one of the largest and best varieties. Its name would suggest its being the pet of some German colonist. Mr. T. Francis Rivers tells me that he knew of it many years ago, but in common with others could not get trees or grafts alive from that distant country, because of the fact that when it was a suitable time to move them there we were in the height of summer, and they were unable to resist the altered temperature on the voyage. We believe that Messrs. Veitch of Chelsea and Messrs. Laing of Forest Hill succeeded at the same time in obtaining living specimens. The first fruits I saw were at the Crystal Palace in October, 1886. Messrs. J. Veitch & Sons' foreman told me they were grown under

glass, and also, that fruit from outside was very good, and that the tree was a splendid cropper. It was awarded a certificate there, and afterwards by the Royal Horticultural Society, and justly so. The examples were of the shape of Peasgood's Nonesuch, but of the appearance of Wellington, more or less marbled with rosy red markings, and the skin translucent like Wellington. I obtained plants that autumn, and grafted on Crab and Paradise; they grew freely, and from the knotted appearance of the wood and the formation of flower buds, promised fruit in 1888. This was the wet year. They flowered profusely, and set fruit their entire length (3 to 4½ feet) and appeared to promise great vigour, combined with the flaccid and somewhat folded foliage of the Hawthornden race, a family noted for productiveness. It was in appearance most akin to Small's Admirable. The rain was frequent and the sun rarely seen, yet the Bismarcks braved the elements, and severe thinning was necessary. The usual mulching was adopted, and towards September better weather came, and to our surprise the fruit grew and assumed an almost bronzy amaranth colour, and finished beautifully as many as eighteen fruits on one maiden tree with two stems. We were awarded certificates for it in the market lots and 50 variety class at the Chiswick Conference.

We sold rather too closely for much fruit this year, but with a more genial season it has been simply marvellous; trees of two years old carrying as many as eight enormous fruits of the most brilliant colour where thinned as large as 3½ inches high in a circumference of 12½ inches. Our dish of it at the Crystal Palace was conspicuous, and led many to credit us with orchard house culture. In order to demonstrate the inaccuracy of this we exhibited dishes from the open and from under glass at the Royal Horticultural Society's meeting, October 22nd, where a cultural commendation was awarded, and the Committee ruled that the orchard house fruit was fit for dessert. In my opinion it will make a good standard, as the growth is naturally pyramidal, and all the shoots turn upwards, but it is admirably adapted for bush culture. It will be many years before standards can be obtained in quantity. As far as vigour is concerned the Crab and Paradise seem to suit it equally. It is a purely kitchen Apple, possessing the brisk acidity of the Wellington, and we kept fruits till the May exhibition at the Temple.—GEORGE BUNYARD.



ORCHID NOMENCLATURE.

SOME time ago the Council of the Royal Horticultural Society called a meeting to consider what course should be taken with the object of improving the present system of Orchid nomenclature, and as a result a Committee was appointed to deal with the matter, with Sir Trevor Lawrence, Bart., M.P., as Chairman, and Dr. M. T. Masters as Secretary. It has not been deemed necessary to proceed hastily, and it was decided not to commence the meetings until October; consequently the first assembly was called for Tuesday last, October 29th, at 2 P.M., in the Lindley Library. On this occasion there was a small attendance, including Dr. M. T. Masters, Mr. J. Britten, Mr. H. Williams, Mr. J. O'Brien, Mr. W. J. Thompson, and Mr. Lewis Castle. Mr. Britten was requested to take the chair, and Dr. Masters commenced the proceedings by reading letters he had received from Mr. T. Thiselton Dyer, Mr. W. Carruthers, Mr. F. W. Burbidge, Mr. Norman Cookson, and others, making various suggestions and representing different views of the subject. Some discussion ensued, bearing chiefly upon the desirability or otherwise of adopting popular or botanical names for Orchid variations, the chief point to be considered. Dr. Masters ultimately suggested that the opinions expressed by the members present and in the letters received should be embodied in a report which he offered to prepare, to be submitted to the next meeting for consideration in detail. This course was adopted, and the Committee adjourned until Tuesday, November 12th, at the same hour—viz., 2 P.M. In addition to those above named as present the Committee comprises Mr. H. J. Veitch, Mr. F. W. Burbidge, Mr. N. Cookson, and Mr. F. Sander.

NAMING ORCHIDS.

A. B. was a very successful botanical collector and discovered several new Orchids in the East Indies and Indian Archipelago. Some of these were imported alive into Europe and are now in general cultivation, and the discoverer has received due credit for them. But he discovered several species, if not some genera, new

to science, and of which he was able only to secure herbarium specimens. On returning to Europe he sent these together with complete information and drawings of them to Reichenbach, but he has never heard anything further about them, and now they are locked up in the Reichenbach herbarium to remain there sealed from the world for the next twenty-five years. In the meantime it is quite probable that C. D., E. F., and others may rediscover these new plants in their native wilds and secure living or herbarium specimens of them, and submit them to the authorities at Kew for identification or name, and have the credit of being the original discoverers. This is very galling and ill requites the dangers, privations, and sickness A. B. underwent, his enthusiasm in the field, and his passionate love for Orchids. But it is a stinging lesson—it teaches us how unsafe it is to trust our eggs in any one man's private basket. Had Kew or some other noble, liberal, public institution of the kind been entrusted with the identification and classification of Orchids no such injustice as that done to A. B. could possibly have been done.—F. (in *American Florist*).

THE FRASER AND HALL FUND.

MR. FRED. HORSMAN sends the following list of promised and paid-up subscriptions to the Fraser and Hall fund (second list):—Sir Trevor Lawrence, Bart., M.P., £15 15s.; Chas. W. Lea, Esq., £5; Fredk. Wigan, Esq., £5 5s.; Mr. J. C. Stevens, £5 5s.; Mr. Peacock, £1 1s.; Mr. Cypher, £1 1s.; Sussex Friend, £1 1s.; Mr. H. G. Smyth, £1 1s.; Mr. Thos. Manning, £1 1s.; E. Harvey, Esq., £1 1s.; Mr. Tracey, 10s. 6d.; Horace Egerton Green, Esq., 10s.; Mr. G. W. Cummins, 5s.; Mr. C. Mason, 5s.; Mr. Bilney, 5s.; G. W. C., 1s.; Mr. Kettle, 2s. 6d.; Mr. Kingston, 2s. 6d.; Florence, 1s. Total, £39 13s. 6d.

CATTLEYA CITRINA.

A charming dwarf growing species, which thrives best on a block of wood, and requires to be hung with the leaves and pseudo-bulbs pointing downwards; it must also be placed in the cool house, the ordinary temperature of the Cattleya house being far too high for it to live in. Pseudo-bulbs small and ovate, bearing two narrow lanceolate acute leaves, which, like the pseudo-bulbs, are glaucous; scape terminal, one, or very rarely two-flowered, the whole flower large, very fleshy in texture, and deliciously fragrant; sepals oblong, apiculate; petals somewhat ovate, broader than the sepals, and, like them, bright waxy citron yellow; lip three-lobed, lateral lobes erect, but not covering the column, middle lobe spreading, somewhat ovate and undulate, white in front, citron yellow in the throat, the disc stained with orange and ornamented with several raised lines. It blooms during April, May, and June, lasting long in full beauty. Native of Mexico. 1835.

CATTLEYA DOWIANA.

A gorgeous Cattleya, evidently allied to *C. labiata*, yet abundantly distinct, and we cannot do better than quote the description of its original describer. "Pseudo-bulbs 8 inches to a foot high, slender at the base, but very much swollen in their upper portion, furrowed. Leaves one on each pseudo-bulb, oblong, thick, and rather broad for the genus, from a span to a foot long. Peduncle two to six flowered, exceedingly stout, about 6 inches long, proceeding from a spathe somewhat shorter than itself. Flowers very large and beautiful, nankeen-coloured with the exception of the lip, their total expansion nearly 7 inches. Sepals lanceolate, acute, sessile, smooth at the edges. Petals more than twice as broad as the sepals, about the same length as the lip, somewhat obtuse, very much waved at the margin. Lip oblong, crisp, very large and prominent, of a substance resembling dark purple velvet, beautifully and uniformly streaked with golden threads radiating from its centre, where they meet three other golden lines passing longitudinally. It is obscurely three-lobed, the lateral lobes being gathered round so as almost to conceal the column; the central lobe emarginate, very large, with its edges exceedingly curled. Column not more than one-third the length of the lip." It requires the warmest end of the house, producing its splendid flowers during the end of summer and autumn. Costa Rica. 1864.

CATTLEYA MAXIMA.

An extremely beautiful Orchid, but we cannot think it has the slightest affinity with *C. labiata*. Pseudo-bulbs clavate, 12 to 18 inches high, furrowed; leaves single, sometimes in pairs, ovate, oblong, obtuse, coriaceous, about 10 inches long and nearly 3 broad, bright green; scape erect, five to ten flowered; blooms large, about 5 inches in diameter; sepals linear oblong, acuminate, flat; petals broadly ovate, much broader than the sepals, with waved margins, the whole a rich rosy lilac; lip large, obscurely three-lobed, the basal part convolute, enclosing the column, middle lobe emarginate, beautifully crisp at the margin; disc smooth, ground colour white, the centre stained with a broad line of orange-yellow, the remaining portion rosy-lilac, traversed with radiating lines of rosy-crimson

shaded in some examples with purple, leaving a clear white marginal border. In some varieties the whole flower is very much paler. This species was first described by Dr. Lindley in 1844 from Hartweg's plants, but we find no record of its flowering in this country until 1855. Native of woods in Columbia and Peru and on the Rio Grande; from the latter locality the finest varieties have been introduced.—T.

A VINE ENEMY. THE COCHYLIS.

THE cochylis unfortunately has been known in France for some time, but this year it has done much mischief. At the last meeting of the Society of Agriculturists of France, M. Benoist stated that on account of the cochylis three-quarters of the champagne harvest would be lost. There is perhaps a little exaggeration in this prophecy, but it proves that so dangerous an insect must not be lost sight of. The cochylis winters under the bark in the chrysalis state shut up in a silk cocoon of a whitish grey; it is then a little creature of 7 millimètres in length, the male is bright yellow, the female darker. They are found under all shelters which can protect them against the inclemency of the weather.

At the end of April or in the course of May, according to the latitude, the moth appears. It is a yellow straw colour, with a bar of deep brown on the superior wings. The female lives from ten to fourteen days, the male not so long. After pairing the female deposits on the buds of the Vine thirty eggs or more, which are hatched about twelve or fourteen days afterwards. The caterpillars of this first generation are very small, but grow quickly, and attain almost 12 millimètres. Of greyish colour they assume in growing a violet rose tint with a brownish red head. They envelop the shoots with silk threads and some of the parts they gnaw greedily. Their development terminated, they suspend themselves on one of their threads, and hide under the leaves or in their cotton to be metamorphosed into a chrysalis. They remain in this state about two weeks. At the beginning or towards the middle of July the moth is developed and prepares a new generation. The caterpillars of this second generation show themselves in August or September, in consequence at the moment when the Grape is approaching maturity, these are the most dangerous. They penetrate into the interior of the berry, feed on its pulp and its seeds. They thus pass from one grain to another, attacking successively whole bunches. The Grape being perforated ferments, becomes brown, and later on gives a bad taste to the wine when it is in a great quantity. This caterpillar, when it arrives at its full development, is suspended on a thread like that of the first generation to form its cocoon, and passes the winter in the chrysalis state.

The double generation of which the cochylis is susceptible, and the two epochs when it appears under the form of a caterpillar, make it a redoubtable enemy. What means have we to conquer this great pest? Several have been put forward, but none give absolute results. In winter, when it sleeps in its silken envelope in the state of chrysalis, the war must be begun by removing the bark and colouring all the parts with a strong insecticide. The same should be done with the props, and the bark collected burnt where the chrysalises may be hidden. Various insecticides may be employed. First, that extolled by M. Balbiani to destroy the winter egg of the phylloxera with a base of thick oil and naphthaline; in the second place the Rohart mixture composed of carbon, petroleum, and phosphorus. Dr. Nessler has proposed a solution composed of sulphate of copper one part, soda, one part of ammonia, half fusel oil (a kind of oil residuum from the manufacture of Potato alcohol) four parts, ordinary soap, water 100 parts.

It is a good plan to water the plants with petroleum or sulpho-carbonate of potassium dissolved in water, so as to get at the chrysalises concealed in the earth. When we find the cochylis in the caterpillar state we can better combat it. Divers methods are eulogised to this effect. M. Vincendon-Dumoulin, proprietor in Dauphiné, advises two treatments with a solution composed of 100 litres of water, 3 to 4 kilogs of softsoap, 2 to 3 litres of petroleum. He spreads this insecticide, inoffensive it seems to the leaves of the Vine, once before the flowering, and again before the "veraison." M. Vincendon-Dumoulin declares that he destroyed a large quantity of larvæ and caterpillars, not only of the cochylis but of other pests. Dr. Nessler recommends the following solution:—400 grammes of soap melted in a litre of water, 50 grammes of fusel oil, 200 grammes of spirits of wine, 60 grammes of essence of tobacco. One or two drops injected with any instrument against the insect destroys it.

The method adopted against the caterpillars of the second generation are the same as for those of the first. One has in addition the opportunity of destroying the berries attacked, by sending women and children through the Vine rows. M. Folx recommends a more energetic remedy—the immediate gathering of all the crop in order to destroy at one blow all the caterpillars. But in addition to this remedy being very radical, if all the neighbours do not agree to do the same thing, the cochylis of the vineyard close by will return the following year to recommence its ravages, and a crop is lost without marked results.—(Cosmos, 10th August, 1889.)

[In the earlier portion of the above paper the cochylis is said to winter under the bark of the Vine. Later in the autumn larvæ are said to involve themselves in cocoons on the branches. Probably the places of

concealment are various. It is known to be found sometimes at the roots of the Vines. The insect seldom troubles Vines in houses, preferring those on walls, espaliers, or slopes of hills. Its proper scientific name is *Onectra pilleriana*. It has not been proved to occur upon the Vine here.]

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 22ND.

SCIENTIFIC COMMITTEE.—Present—Mr. McLachlan, in the chair Mr. Morris, Mr. Veitch, Dr. Oliver, Mr. Symons, Dr. Scott, Dr. Muller, Mr. Michael, and Rev. G. Henslow (Hon. Sec.)

Rhododendron and Azalea bigener (fig. 44).—Mr. Veitch exhibited two plants raised from a cross between *Azalea indica*, *Stella* (male) and Lord Wolseley (female), a *Rhododendron* of East Indian parentage. [*R. jasminiflorum* × *R. javanicum* = Princess Royal; Princess Royal × *R. Brookeanum* var. *gracile* = Duchess of Teck; Duchess of Teck × *R. javanicum* = Lord Wolseley]. Both plants were from the same pod, but while one was about a foot in height the other was scarcely 3 inches, though six years old. The former bore a truss of orange-coloured flowers of about the same colour as those of Lord Wolseley. The corolla was somewhat smaller with not so broad a limb, and in texture approximated the *Azalea*. Mr. Henslow undertook to examine and report upon the

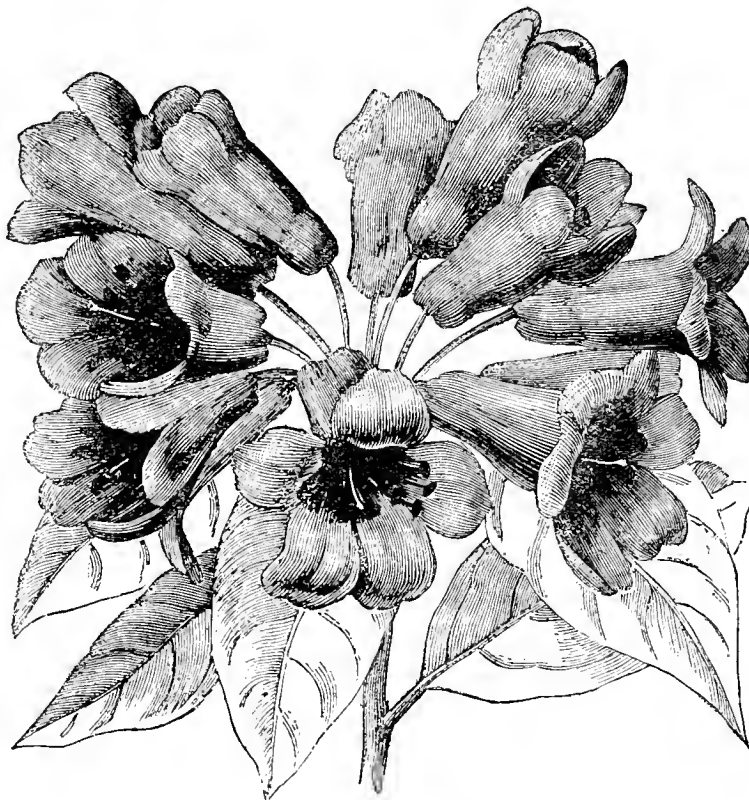


FIG. 44.—A HYBRID RHODODENDRON.

anatomical structure of the leaves to see if there were intermediate characters. A botanical certificate was unanimously awarded to Mr. Veitch for this interesting cross between two genera.

Peas Diseased.—Dr. Oliver reported upon the plants sent by Mr. Pownall to the last meeting, but having insufficient specimens he was unable to assign a cause for the injury. Fresh material having been received with roots attached, he undertook to report further upon it at the next meeting.

Change of Sex Induced by a Parasitic Fungus.—Mr. Plowright forwarded an interesting communication upon the effect of *Ustilago violacea* on *Lychnis vespertina*. He artificially impregnated a female plant with spores from the anthers of a male plant of *Lychnis diurna* infested with the *Ustilago*. Although the hybrid offspring raised were perfectly healthy, yet the female parent plant itself (*L. vespertina*) bore nothing but male flowers in the following year, every one of which was affected with *U. violacea*. A fuller account will appear in the Journal of the R.H.S. It was observed by members of the Committee that the explanation is that the change of sex is due to compensation. Whatever tends to lessen the vitality or vigour of the pistil may heighten that of the stamen, as occurs frequently in hermaphrodite flowers, and when they are normally unisexual then the lost sex may reappear, when the energy is diverted from the one usual present. Moreover, if the constitution be weakened, as was possibly the case in the present instance by the fungus, then the plant may be only capable of forming stamens, for it is well known that the male sex is often correlated with a lessened degree of vitality.

Oranges Attacked by the Fly.—A communication was received from Malta stating that, "The Orange fly, *Ceratitis citriperda*, has of late years done much damage to the fruits of the Orange and Mandarin trees in Malta. It has also attacked the fruit of the Pear, Peach, Nectarine

and Fig. The females penetrate the skin of the ripe fruit and deposit their eggs, and the larvæ rapidly destroy the fruit. It is believed that in the island of Malta there are four broods of the fly in the year. The fly has been observed in Italy, Spain, the Azores, and South Africa." No specimens were sent, so that no opinion could be expressed upon the matter or a remedy suggested. It was thought advisable to take this opportunity of calling the attention of correspondents to the extreme importance of their invariably sending specimens with their communications, otherwise it is quite impossible for scientific experts to return satisfactory replies.

Fog Report.—The discussion upon the injury of London fogs upon vegetation was renewed, and a circular drawn up, which will shortly be issued to growers within a radius of twelve to fifteen miles from the metropolis. The Committee trust that they will furnish as full details as possible, with the hope that the investigation may lead to the adoption of such preventives, as conditions will permit, against the increasing injury which now prevails in the suburbs of London.

The Lady Apple.—Mr. Henslow exhibited a spray covered with the brightly coloured fruit from a tree which grows in a hedge within his garden, near Drayton Green, Ealing. It is probably a descendant from some plant introduced many generations ago. It is asserted in "The Fruit Manual," by Dr. Hogg to have been brought from the Peloponnesus to Rome by Appius Claudius, and was called the "Lady Apple" because ladies in France were accustomed to carry it in their pockets in order that the peculiar odour might be imparted to their handkerchiefs. Though known to early continental writers it does not appear to have been introduced into England till the end of the seventeenth century. It was first discovered as a wildling in the Forest of Api in Brittany. Only one dish was exhibited (by Mr. Pragnell of Castle Gardens, Sherborne, Dorset) at the National Apple Congress in 1883, and one dish at the Apple and Pear Conference, 1888. Hence it would seem to be nearly extinct in England at the present time. It has little or no commercial value, though useful for decorative purposes.

Gentiana Amarilla, sub. sp. Germanica.—Dr. Masters exhibited specimens of this plant from Tring, whence it was first recorded. Hooker and Arnott, "Brit. Flor.," 1855, give only Tring and Ripon as localities, but Hooker, "Stud. Flor.," 1884, mentions York, Pemb, Herts, Berks, Surrey, and Hants. Though regarded as separate species by some continental botanists, intermediate conditions link the extreme forms together.

PRUNING AND ITS EFFECTS.

AN intelligent use of both pruning knife and saw is to be commended in cases where the work of renovation is being carried out on the lines laid down on page 216, and, it is almost needless to add, plays an important part in maintaining the productiveness of healthy trees not requiring to be lifted or root-pruned. Many err in using the knife especially too freely, and it is also possible to make a mistake in the opposite direction. I have a great aversion to long, ugly spurs on wall trees, notably of Apricots, Plums, and Pears. Of what use are the walls if the portions of the trees which only can produce fruit are from 6 inches to 12 inches away from them, or where they derive little benefit from their warmth and shelter? Not only is warmth wanted to assist in the development of clean, full-sized fruit, but is still more imperative in many districts where the growth is naturally late and the wood ripens badly. Who ever saw fine Pears, for instance, borne by long, knotty spurs? Long spurs on Apricots and Plums are certainly fruitful enough at times, but very rarely is the fruit so large or so brightly coloured as the same trees would be capable of producing if the fruiting spurs were close to the main branches. The aim therefore of would-be successful growers should be to prevent any young and as yet unspoilt trees from forming long spurs, and also to gradually reduce the number and length of any already too far from the walls.

The start may be made with spur-shortening any time after this is in print, and I am inclined to think the sooner the better. Supposing summer stopping has been resorted to, or the trees were pruned after the lateral growth was well advanced towards maturity, all being pruned to within about 4 inches of their starting point, those on trees not previously spoilt by the neglect of this precaution ought to be still further shortened to a length of about 1 inch of the main branch. Persevere with this practice every season, and in the course of about three years a good cluster of fruit spurs should result. If the trees are too vigorous, and nothing but wood buds followed by strong lateral growths result, then in some instances nothing but partly or wholly lifting them will correct this unfortunate state of affairs. Not unfrequently, however, the practice of laying in all leading growths required for furnishing blank wall spaces, or any thin places among the older branches, to their full length, has an excellent effect on the productiveness of a tree. These leading branches, if well ripened, will usually develop fruit buds at nearly every joint and good crops of fruit, and is an excellent preventive of grossness, the fruitful habit gradually extending to other parts of the tree. On no account should well matured leading shoots be topped or shortened back, however

slightly, as this is certain to defeat the object in view; in fact, unless they, if pruned at all, are cut back to about one-third of their length the greater portion as a rule will not even be furnished with laterals next season.

Much may be done in the way of reducing the length of old spurs by foreshortening, but in many instances the more drastic measure of sawing them off cleanly to within 1 inch, or even closer, to the main branch ought to be resorted to. The former is perhaps the slowest method of the two, but if persisted in every autumn till such times as the spurs are all sufficiently close to the branches there will be no appreciable falling off, but rather the reverse, in the weight of the crops, while the quality will be gradually improved. Foreshortening in this case merely consists in cutting back the longest spurs to a well-placed bud or cluster of buds much nearer the branch, and if this is done piecemeal the greater portion will push out back buds, and an improvement in every way soon becomes apparent. Long naked spurs cannot be treated in this way, but as these are usually found on trees too densely clothed with so-called bearing wood the removal of one half of these would act beneficially, even if many of them failed to break afresh round the stump left. The trees I have served in this way, the work of thus freely shortening back being extended over two or three years, have failed to break freely in a few instances only, and none need be afraid to adopt the plan, as the trees must be in a very miserable plight at the roots if they fail to respond to knife or saw. The spurs on several of the Pear trees, the roots of which we gradually lifted and relaid in fresh soil (see page 216), were extensively sawn off, and not a blank space on the main branches is to be seen. A tree of Vicar of Winkfield, which covers a wall space 24 feet by 12 feet, this season produced twenty-four dozen fine clean fruit, and the crop was nearly as heavy last year. Another equally large and healthy specimen on the same wall (aspect east) and similarly treated produced nearly twenty dozen fruit in 1888, and this week we have gathered eleven dozen fruits from it of extra good size and appearance. The quality of neither of these old favourites is usually considered first class, but unless I am much mistaken few lovers of fruit would condemn either as grown and ripened here. Marie Louise has greatly improved under this process of top and bottom renovation, and the same may be said of Glou Morceau, Louise Bonne of Jersey, Winter Nelis, and Easter Beurré. I ought to add that we take particular care not to drag off old spurs with a part of the main branch attached, as they are either cut with a strong sharp knife or are sawn off, the wounds being pared and smoothed with a knife.

Not only is it advisable to replace old spurs by short new ones, but in the case of Apricots and Plums especially worn out or stunted old main branches may often with advantage be replaced by young ones. Sometimes it is necessary to cut back a few of the main branches to near the main stem or base of the tree, in order to obtain the requisite young shoots for laying in, while in others they are naturally produced where most needed, and in this case those they are to replace need not be cut out till the young ones are two or three years old. Not a few Plum trees, notably where the head room is much restricted, form a thicket of lateral growths at the top of the wall, the lower portion of the main branches being very badly furnished with fruiting spurs. Either these top-heavy branches ought to be freely shortened back, so as to promote the formation of shoots nearer the bottom of the walls, or else the long spurs must be sawn off, and more care taken of the lower shoots that may be formed, and also in pruning the laterals resulting from the stumps. When trees grow thus strongly near the top of the walls those in charge, or it may be the owners, are apt to let them to extend as much as they will, the consequence being a bushy head fully exposed to all weathers, the rest of the tree gradually getting weaker and still more useless. It may be urged that these more naturally grown heads are frequently much the most productive part of the trees, and this I readily admit is the case; but the proper place for standards are in the open, as walls ought to be more profitably utilised.—CULTIVATOR.

TREE CARNATIONS.

I AM glad to know that the opinion of "W. S." coincides with my own in regard to the great value and undoubted floriferousness of the two varieties of these beautiful flowers, the good qualities of which were enumerated in a recent note of mine. I am also pleased to hear that your correspondent has been successful in flowering satisfactorily all the varieties of Carnations he has yet tried; and although he does not quite agree with me when I say that some of the most beautiful of the varieties bloom but little till the spring months, I think he will go so far as to admit that among the varieties he mentions some flower much more freely during the dull months of November and December than do others under precisely the

same treatment. Assuming that "W. S." will concede the point so far, the real difference that exists between us on this subject is only of a comparative nature, and in drawing attention to the sterling qualities of Valencia and Miss Joliffe I wished to point out how much superior they were to many varieties of great beauty, but which, if compared with those indicated, are found wanting in floriferousness during the two months of the year when these lovely and deliciously scented flowers are especially valued. Take for instance the following varieties, the flowers of which are always esteemed when they can be had—Oscar and Empress of Germany. True they produce flowers occasionally before Christmas, but it is not till the turn of the year that they will bear comparison with Valencia and Miss Joliffe for yielding quantities of flowers from a 5 or 6-inch pot. Still they are valuable for supplying their finely marked blooms during the early spring months, and I quite agree with "W. S." that Carnations are appreciated at any time of the year; but to all who require a good supply of blooms from the present time till Christmas, I say, Do not depend on these, but select those varieties that have a natural tendency to flower profusely during that period. "W. S." does well to attach great importance to early propagation and liberal treatment, as without these aids good results can never be obtained; but given the same favourable treatment some varieties flower much better from November to January than others do. What say other readers of the Journal?—H. DUNKIN.

STORING ROOTS.

WHERE vegetable roots are required in variety and quantity all the year round it is imperative that as little loss through decay should be sustained as possible. Having tried various expedients to preserve roots, more especially Carrots, during the late winter and spring months with more or less success, I find freshly gathered or collected leaves the best of all material for this purpose. Anyone who may have experienced failure through using sand, ashes, mould, hay, or other unsuitable covering would do well to spread a slight layer of 2 or 3 inches of Oak, Beech, or Chestnut leaves (if mixed all the better) underneath the roots, and after leaving the latter a few days to dry partially cover with 3 or 4 inches of the same mixture, and in anticipation of severe weather setting in a few inches more may be added later on in the season. Since adopting the above simple plan we have had little loss comparatively amongst a quantity of Carrots, Beetroot, Turnips, and Parsnips stored away at this season for several years past. Believing the above hint might be useful to some inexperienced grower of either one or all of those very necessary vegetables is my only excuse for desiring a small space for so simple a subject in the pages of this important horticultural work, "the Journal."—W. H. CHISHOLM.

[No excuse is needed for communicating useful hints, and those on so-called "simple" matters are often of substantial service to many readers.]

INSECTS OF THE FLOWER GARDEN.

(Continued from page 265.)

If we examine the walls of tool houses and garden sheds in the autumn and winter months, especially those that are but dimly lighted, we often find moths of various sizes at rest, awaiting the approach of a brighter season, when they may deposit their eggs. It would hardly be fair to condemn these to death indiscriminately, as some of them are not likely to be the parents of destructive caterpillars, but others may be, hence the advantage of gardeners having sufficient entomological knowledge to enable them to recognise the commoner insects in any of their stages. One of these hibernating moths not unusual on palings or under cover is the Hebrew character (*Toenocampa gothica*), which gets its familiar name from a peculiar mark on the fore wings, which are purple brown tinged with grey, and remarkable for having scales which seem raised above the surface. Its caterpillar is found in June, being rather conspicuous for its markings of yellow and white upon the pale green ground colour. It occurs both in shrubberies and flower gardens. Mr. Doubleday found it eating the Laurel or Sweet Bay, which most caterpillars avoid. It would probably be a much more abundant species were it not for the exertions of insect-eating birds. Those that escape all two-legged and parasitic foes bury in the earth to transform themselves to chrysalides, emerging in the autumn just in time to regale on the sweets of Ivy bloom ere they repose.

The very variable moth called the dun bar (not Dunbar), also *Cosmia trapezina*, is only occasionally seen in gardens, nor is its caterpillar a frequent visitant, but it must be regarded as a useful species, and one to be protected. Indeed, it would be an advantage

to introduce the caterpillar in gardens, for though it eats the leaves of some trees, such as the Oak and Hornbeam, its chief food is the juices of other caterpillars, which it hunts eagerly. One of its favourite objects of attack is the caterpillar of the winter moth, so mischievous to our fruit trees during May and June; of these it destroys large numbers some seasons. Possibly the abundance of this caterpillar in 1889 is partly attributable to a scarcity of its insect enemies such as the above. The dun bar caterpillar, however, is no wise particular, and chases any other it can get near unless it be hairy, but as its movements are not very rapid some escape by crawling rapidly or dropping. This caterpillar has a small head and plump body of dusky green, distinctly marked with five whitish stripes running from head to tail, and scattered over the surface are rows of black warts, each surrounded by a white ring. It appears to pass the winter in the caterpillar state.

The caterpillar of the angle shades moth (*Phlogophora meticulosa*) is one of those which I have taken on Chrysanthemums, plants not generally attractive to caterpillars. It prefers, seemingly, other composites more succulent and less aromatic, and also feeds on Primulas and various low plants in gardens, continuing to nibble the leaves through the winter when the weather is mild. In form this caterpillar is rather leech-like, and if alarmed it coils into an imperfect ring; the colour is green or greenish brown, a white line runs down the back, and one upon each side of the body. Upon the thorax of the moth are long tufts of hair, and the wings, which are grey, have angulated markings of brown or green, which suggested the English name. Some years ago a nurseryman at Norwood, Surrey, called my attention to his China Asters which had been disfigured by the pretty caterpillar of the star-wort moth (*Cucullia asteris*). It is sometimes seen in gardens, and occurs also in woods upon the wild Golden Rod, to which it is partial. This is a slender caterpillar, each extremity being narrowed, the general colour green, with three yellow and two blue stripes. It is, I suppose, from the appearance of the caterpillars that the moths of this genus have as a group received the name of "sharks." One of the larger species feeds on the leaves of the wild and the garden Lettuce, concealing itself by day amongst the loose soil.

In both the kitchen and the flower garden the moth called the Silver Y, and also the Gamma (*Plusia Gamma*), is often to be seen flying about in broad daylight, but it is also to be observed at dusk, and later, nor should I be surprised to see a specimen on the wing at midnight or early morning, for it is a restless species. As the moth is about all through the summer months most years there must be a succession of the caterpillars, which feed upon a variety of plants, preferring culinary vegetables; but owing to the attraction of fragrant honey-yielding flowers have for the moths they resort to the beds and borders, as a consequence sometimes depositing eggs there upon Dahlias and Hollyhocks or on humbler plants. Hovering over flowers, the gammas vibrate their wings so rapidly that they are hardly noticeable, and when it is dark their eyes shine like tiny stars. Since a single moth will visit many flowers in one day this must be one of the species that assist in the fertilisation of plants. It is a moth remarkable for the silvery mark, compared to the English Y or the Greek letter Gamma, placed in the centre of a deep brown patch upon the forewings, the general colour of which is a glossy grey. The caterpillar producing it has the habit of looping up the middle of the body like those of the Geometrine moths; the head is smallish and the tail thickened, the colour lightish green striped with white and yellow; it is commonest in the early summer, but also occurs towards autumn. A remarkable fact in its history is the alarm caused by its appearance amongst pot herbs in some continental countries, the people being under the delusion that it imparted a poisonous quality to any leaves it touched. The mouse (*Amphipyra Tragopogonis*) has received its odd English appellation from the peculiar way in which, when alarmed, it runs along any flat surface very much as a mouse would. It is a dull-coloured moth with no particular markings, appearing about July. The caterpillar feeds in May and June, when it is not uncommon in some flower gardens, eating the leaves of a variety of plants, but showing a special liking for Larkspurs. It is one of those caterpillars that is best got rid of by examining the plants at an early hour, as it hides during the heat of the day. The head is almost hidden by the next segment of the body, which is velvety and smooth throughout, sometimes light green, or it may be greenish brown. Specimens of the first sort have yellowish stripes, but the darker ones have them white.

The caterpillars of the moth called the Gothic (*Nænia typica*) are just about this time preparing to lay up for the winter, seeking out nooks amongst Box edging or in some corner of a rockery, or any partially sheltered spot. They are as yet small, making the chief of their growth in the spring months, but they feed in little companies during part of September and October upon herbaceous plants along the borders. I have more than once found them infesting the lower leaves of the Chrysanthemum, but I think this

is exceptional. A curious thing is that the moths lay their eggs upon fruit trees, and after they have fed a week or two the young caterpillars travel down to visit garden plants. In colour they are dark brown with some white lines and black dots. Probably the moth received its name from the numerous crescent-like spots upon the wings.—ENTOMOLOGIST.

OSIER CULTURE.

CAN you give me any information upon the culture of Osiers, naming the best sorts and the probable profits to be derived?—C. M. S.

Our correspondent will find what he requires in the following article, which appeared in these pages some time ago :—

Plantations, or large beds of Osiers, might be very advantageously grown in almost any soil—such as banks of rivers, drained moors, &c., and, annually cut, would produce a sum of money that I have no doubt would largely remunerate the grower. And from land that cannot otherwise be made available for tillage, notwithstanding the vicissitudes of seasons, taking good and bad under view, the writer has experimentally ascertained that an acre of Willows or Osiers will often bring the grower a larger sum of money than an acre of Wheat; and likewise from land that would be almost useless for other kinds of crops. It is rather astonishing that the growth of them is not more attended to both in England and Scotland. As regards the nature of the soil and subsoil suitable for growing them in to the best perfection, Osiers delight in banks of rivers or drained moors, and are greatly invigorated by occasional floods or irrigations. Plantations of them may also be formed, and will succeed well, on low spongy bottoms along the margin of streams, in almost any lowland district of Britain.

In the great majority of farms are to be found level, marshy, wet spots, which, by drainage cannot well be made available for tillage, and which might be planted with the Willow, and would afterwards recompense the proprietor or farmer in a twofold way. The land might be prepared in various ways for this crop, owing to the extent and nature of the soil. Where the land will admit of being ploughed and harrowed, and has formerly undergone cultivation, I find that, at the present prices of Willow-sets or plants, and the expense of labour, it would not cost more than £8 15s. per English acre, allowing the plants to be planted at a distance of 28 inches by 18 inches apart. But I find that for plantations of any considerable extent for Osiers the ground should be formed by the spade into beds of from 8 to 9 feet broad, with intervening furrows or narrow ditches to carry off the water. The plantation may be made at any time between the fall of the leaf and an advanced period in spring; but the two last weeks of February and first week of March are the most proper times for planting the Willows. Cuttings 15 inches long should be taken with the knife on an upward slope from well-ripened wood of either two or three years' growth; experimental trial convinces me they grow more luxuriantly when planted about two-thirds of their length in the ground than when they are less deeply inserted.

I can learn from frequent trials that, where depth of soil can be obtained, Osiers succeed best in a deep, moist, free soil—ground to be dug to the depth of 24 inches, with a small quantity of dung and old lime rubbish put in the bottom of the trench. When Willows are planted in stiff tenacious soils they are much more tardy in growth, and very liable to the ravages of a brown bug, which is accompanied by a black caterpillar, often making great ravages. The ground should be hoed and kept clean; the space will well admit of this, as Osiers should in no case be planted closer than 27 inches by 18 inches apart. The expense of preparing Osier plantations by spade-work in this way of course depends much on the nature and situation of the land; but in ordinary soils drains can be cleared out to the depth of 30 inches by 22 inches broad at surface, having a scarpment, leaving it 12 inches broad at bottom. This form of a ditch can be made at from 5½d. to 6d. per perch, and the ground of an English acre, trenched and prepared to the depth of 2 feet, for £6 10s. 6d., or nearly so, and planting performed at about 18s. per English acre. The Willow, for the use of the basket maker, should be cut every year slopingly with the knife, within three buds of the point whence the shoot issued, and will admit of being cut back once in three years for the use of the cooper, exactly to the swell of the shoot of the three years' growth, thus compressing the plant back to its ancient dwarf form, at the same time realising a handsome return.

Moreover, by treating Osiers in this way they will last and produce well for a great many years. The ground should be deeply stirred with the hoe and kept clear of weeds; but digging with a spade around the roots of Willows often proves very hurtful to the fibrous feeders, as we often meet with a great portion of such oozing and growing very near the surface of the soil. Plantations of Osiers thus treated, notwithstanding the vicissitudes of the seasons, will bring the grower at least the sum of £12 sterling for every year after they arrive at their full growth. This sum of £12, I have minutely tested, can be at the present time realised from an English acre of Willows, after all expenses of cleaning and cutting-down the crop are adopted.

The Best Varieties and Most Profitable Applications.—The kinds most approved of for pollarding, coppice wood, fuel, poles, or bark, are the Huntingdon Willow (*Salix alba*), and a variety called the Red-twigged or Bedford (*S. Russelliana*).

The best sorts for Osier grounds are—First, the common Osier (*S. viminalis*); second, the Red Osier (*S. rubra*); third, the fine basket Osier (*S. Forbyana*); fourth, the Velvet Osier (*S. mollissima*); fifth,

the Long-leaved Willow (*S. triandra*); sixth, the Golden Willow (*S. vitellina*). These are the sorts most esteemed for the various purposes of the basket maker, the cooper, and the turner. The way in which Willows are most commonly disposed of, after being cut, is they are sorted into trusses and tied into bundles of 2 feet and sometimes 2 feet in circumference, and if intended to be stripped of their bark they are set on their thick end immersed a few inches in standing water, and left there until the latter part of the following month of May.

It has of late been asserted by various respectable parties that as high a sum as from £13 to £14 of nett profit, and sometimes more, could be derived at the present time from an English acre of Willows, under very ordinary treatment. They succeed best in northern exposures provided they are not over-topped. Should the ground be at all suitable for the crop, each set will produce in the first year two good basket rods, or 24,000, worth 6d. per 100 of 120. The second year, the sets being much stronger, will produce on an average six rods, one more or less being considered a very common number, one of which may be left on each stock for hoops, and the remaining 60,000 cut for baskets, which would be worth much about £24 sterling. By the third year there ought to be at least 12,000 hoops, worth 4s. per 100 of 120, and from 28,000 to 29,000, worth at least £13 10s.

These results may be obtained even by fair cultivation under ordinary circumstances. Of course it may sometimes be difficult to obtain a ready market or sale for the basket rods; the hoops we find to be always such, and much sought after. The greater part of those used in Ireland are imported and much sought after also, with commonly a very scanty supply. No hoops should be left by the third year on the plants, as the rods which grow under the shade of the hoops are seldom or ever strong enough. Mr. Phillips of Ely in England, was one of the greatest cultivator of Osiers at the close of the eighteenth century and beginning of the present, and he always obtained from £12 to £18 per acre, according to the fluctuation of prices, after deducting all costs of labour, &c.; the Red Welsh Willow (*S. purpurea*), and the White Welsh (*S. helix*), being at that time the two leading and favourite sorts, they being at that time disposed of in bunches an ell in circumference, after being peeled and whitened, by compressing them in an iron hoop to this size. If the plants be not in any way destroyed by insects, to which in some years they are subject, under good cultivation upwards of £10 could, at the present time, be realised of nett profit, after deducting all expenses of labour, from an English acre of Osiers; and although an old adage in Lincolnshire, it is nevertheless still true, that "a Willow will buy a horse before an Oak will buy a saddle." As to what towns and countries they are in most request, we find them in request in a great many large manufacturing towns and seaports, more especially in Dublin. The butter trade in Ireland causes a great consumption for hoops for butter firkins throughout the season. I have witnessed hoops of Hazel and Black Sally, as it is termed, sold at 12s. and 13s. per 1000, and the cooper cut them at his own cost; and in Dublin there is the Institution for the Blind, that requires to import a great many yearly to keep their hands employed. A much greater consumption for Willows might be relied upon were they but more extensively cultivated. An accurate calculation has been made that at least 6000 acres of Willows could readily be disposed of in Scotland and England, at prices that would very handsomely remunerate the grower.



CHRYSANTHEMUM CENTENARY CONFERENCE AT CHISWICK, NOVEMBER 5TH AND 6TH, 1889.

AMONGST the celebrations of the centenary of the introduction of the Chrysanthemum into Europe, organised at Edinburgh, Toulouse, Ghent, and other centres of horticultural activity, the Exhibition and Conference to be held by the Royal Horticultural Society in the gardens at Chiswick should prove conspicuous for interest, for the metropolis is, before all places, the home of the eastern flower.

It is arranged that an historical display of flowers grown by the Society will be made in the great vinery at Chiswick, November 5th and 6th, this being supplemented by collections of plants and flowers contributed by cultivators, many of the most eminent of these being members of the Managing Committee. The schedule for the Show consists of thirty-six classes, and although in some few of these the usual practice of "dressing" the flowers will be allowed, the general purport of the classes is to ensure the finest and most representative examples of natural development, the skill of the cultivator stopping short at the point where intentional modification of form begins. Thus in the classes for plants there are some special places reserved for such as are best adapted for decorative purposes, apart from the "finishing touches" of the florist, while in several classes for cut flowers the specimens are to be accompanied with natural foliage, and are to be shown as cut from the plant. In certain classes dressing will be allowed, and will be carried to the highest point by experts; but the natural growth of the same varieties will appear with them, to afford instructive contrasts

between the alloy and pure metal. The intellectual part of the entertainment will consist in the reading of papers and the discussion of points of interest by the President, T. B. Haywood, Esq., member of the Council; by Mr. C. Harman Payne, on the history; by Mr. E. Molyneux, on new varieties; by Mr. J. Wright, on judging; and by Mr. Shirley Hibberd, who will recount the progress made. These five will furnish the matter for the discussions of the first day. On the second day Mr. F. W. Burbidge will discourse on the production of seed, Mr. C. Orchard will explain his method of dwarfing plants, Mr. C. Pearson will treat on cultivation for market, and Mr. W. Piercy on the production of early varieties. Another important feature of the undertaking is the appointment of a series of Committees of experts, who will critically examine the whole of the varieties exhibited, and name the best amongst them for various purposes, to furnish a body of authoritative information for the benefit of the general public.

THE time is now fast approaching when it will be proved whether the Conference in connection with the celebration of the centenary of the Chrysanthemum arranged by the R.H.S. will prove a success or not. From what I hear, and the evident interest which is being taken in it by Chrysanthemum growers, it bids fair to be quite a success. Let us hope that our expectations will be realised by a good muster of the lovers of the flower, and by a good exhibition also. The executive Committee has made all reasonable arrangements to ensure success, but one omission in the schedule has been pointed out to me which I think needs mentioning. In the cut bloom classes fourteen and fifteen, twenty-four distinct blooms of incurved and Japanese are asked for. Except for very large growers this is a difficult class to fill satisfactorily. The omission is that a class for twelve distinct blooms was not made to enable those cultivators to send the latter number who were not in a position to send twenty-four distinct varieties. This objection to the schedule classes is, I think, quite reasonable, and speaking on behalf of the executive Committee, I should say that if any cultivator can bring a stand of twelve distinct blooms in any section he would be welcomed, although such a class is not specified in the schedule. It is gratifying to find that so much interest has been taken in filling up the forms for statistical returns. There are still, however, many forms distributed which have not been returned, and if any person would desire one I shall be pleased to forward it at once. The Council of the R.H.S. are anxious to issue the report of the Conference in their Journal for December. Therefore for the purpose of tabulating the returns I ask all those who have not done so to kindly send in their returns by the middle of November either to the Rev. W. Wilks or to myself. Much information may be gained we hope by the exhibition of appliances for growing and showing Chrysanthemums, which we expect will be largely represented. This will be an excellent opportunity to display any new invention which is likely to be an improvement on existing methods.—E. MOLYNEUX.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of this Society's Floral Committee was held at the Royal Aquarium, Westminster, on Wednesday, October 23rd, at 2 P.M. Present—E. Sanderson, Esq., in the chair, and Messrs. H. Ballantine, W. Holmes, George Gordon, Lewis Castle, C. Gibson, R. Dean, George Addison, H. Bevan, W. Boyce, J. P. Kendall, J. Wright, and W. Mardlin. The principal collections of blooms, including many novelties, were contributed by Messrs. H. Cannell & Sons, Swanley; Messrs. J. Laing and Sons, Forest Hill; Mr. R. Owen, Maidenhead; and Mr. Fraser of Camberwell, the last named amateur having a stand of twelve fine Japanese blooms, capitably representing E. Molyneux, Edouard Audiguier, Madame C. Audiguier, and Val d'Andorre amongst others. Certificates were awarded for the following.

Madame Louise Leroy (W. Fyfe, Overston Park Gardens, Northampton).—A handsome Japanese variety, with large deep substantial pure white blooms, the florets long, flat, or fluted, and slightly twisted.

President Hyde (R. Owen).—A Japanese reflexed variety with medium-sized compact blooms of deep rich golden colour, the florets fluted and recurving.

Thomas Stephenson (R. Owen).—A sport from Criterion, which appeared last year, and was not considered sufficiently distinct. It has also been shown this year of a lighter colour, though several have tried it in large collections this year and find it distinct. This was the opinion of the Committee with regard to the blooms shown by Mr. Owen, which possessed a rich salmon red colour, more like it is at Swanmore Park, and in this state a decided acquisition.

Victorine (R. Owen).—This is a small elegant deep red Pompon, remarkably free and dwarf, and it was commended for cutting, the blooms not being considered quite large enough for show purposes.

Emma Stevens (G. Stevens).—A seedling Japanese reflexed, raised at Putney, with deep compact blooms, pure white, and handsome.

Stanstead White (J. Laing & Sons).—A Japanese variety with enormous pure white blooms, 10 inches in diameter, the florets very long, somewhat tubulated, less curving at the tip, after the Dragon style of bloom. A good show variety, represented in our illustration (fig 45, on page 379).

M. Charles Leboeuz (J. Laing & Sons).—A Japanese Anemone, a fine well developed bloom, with a well-raised centre and guard florets, citron yellow. A distinct colour. It was also certificated by the Royal Horticultural Society on the preceding day.

M. Pankoucke and Eynsford White (H. Cannell & Sons).—Both

these were certificated by the Royal Horticultural Society on the previous day, and were described last week.

Robert Cannell (H. Cannell & Sons).—A seedling incurved variety, with very large, deep blooms, and broad, well incurving florets. The colour is a deep brouzy red, showing in the outer florets a deep crimson upper surface like many of the Japanese. The plant was dwarf but strong. The colour is distinct, and the breadth of the florets would render the variety very conspicuous in a stand of incurved.

CHRYSANTHEMUM W. G. DROVER.

HAVING noticed this year that Chrysanthemums are developing unusually large blooms, perhaps the following may be of interest to the readers of your valuable paper. During the previous week an opportunity was afforded me of witnessing what appeared to be a grand bloom of the Japanese variety W. G. Drover. The specimen was a large and solid bloom, 11 inches in diameter and 6 $\frac{3}{4}$ inches in depth, after cupping, with a good full centre, medium to fine florets, devoid of coarseness, and of a brighter colour than those previously noticed. This bloom was only one of six, I am informed, of the same variety, each being of almost equal size and quality, and was grown by Mr. Trinder at Dogmersfield Park, who is known as a successful exhibitor of Chrysanthemums, and who will, no doubt, turn his fine blooms to good account in the forthcoming campaign. At a recent visit to the above gardens the plants were looking extremely well, the whole presenting fine healthy foliage, combined with moderately strong and solid wood. The early development of blooms this season appears to be general, consequently many fine examples will be sacrificed long before the principal shows commence.—VECTIS.

HARD CHRYSANTHEMUM BUDS.

I ENCLOSE for your inspection a specimen of an exceedingly hard undeveloped bud of a Chrysanthemum. I had several this season on different varieties, some partly opened, and produced a ben-and-chickens form of flower; others decayed and refused to open. The specimens sent were formed in July, and were at that time selected for suitable flower buds to produce well-formed flowers in September and October. The variety these were cut from is an American named Robert Craig. I trust they may be of interest to you.—ROBT. OWEN.

[The buds sent were nearly 2 inches in diameter, green, and quite hard, formed chiefly of short bracts and undeveloped florets.]

CHRYSANTHEMUMS AT FROYLE PARK.

AS I was privileged a few days ago to witness one of the grandest displays of Chrysanthemums I have ever had the pleasure of seeing, it occurred to me that a few notes would probably interest many lovers of the Chrysanthemum who, like myself, look weekly to the *Journal of Horticulture* for what is said on this favourite flower. Mr. Oliver, the proprietor of Froyle Park, is an ardent lover of horticulture, and through his liberality Mr. Coster, the gardener, has been enabled to make Chrysanthemums a speciality at Froyle Park, and this season he has excelled all his previous efforts in providing such a magnificent show at home as is seldom seen. About 600 plants are grown on the large bloom system, and I venture to say that healthier plants could not be found. Three to six flowers are allowed on a plant, which range from 3 to 5 or 6 feet in height, and the whole being very tastefully arranged in one long bank or group in the conservatory, the effect produced is very striking. All the best of the older varieties are represented, and the collection includes most of the later introductions of merit. Such varieties as L'Or du Japon, Avalanche, Mr. Garnar, Marsa, Sunflower, Garnet, M. Tarin, William Holmes, Moonlight, Stanstead White, Madame Laing, Sarah Owen, Madame de Sevin, Ralph Brocklebank, Mlle. Moulis, and George Daniels, I noticed as exceptionally fine. Enormous bush plants, with foliage to the rims of the pots, and with hundreds of flowers on a plant, of such varieties as Lady Selborne, Mrs. Cullingford and James Salter, arranged with fine plants of Bouvardias, &c., on the side stages, were a sight not often seen. Other plants are well done at Froyle Park, especially Violets, Primulas and Poinsettias. In one of the large plant houses I noticed a magnificent plant of the beautiful but seldom seen *Bignonia venusta*, commencing to flower very freely. Fruit and vegetables are also finely grown, but as my visit was to see the Chrysanthemums, I must defer the other objects of especial interest to a future occasion.—G. TRINDER, *Dogmersfield Park, Winchester.*

THE MORDEN PARK CHRYSANTHEMUMS.

AN annual pilgrimage to Morden Park (the residence of J. Wormald, Esq., one of the Vice-Presidents of the National Chrysanthemum Society), has for a number of years constituted one of the most agreeable events in the Chrysanthemum season programme. We are always certain to find there well-grown plants with capital blooms, and a genial unassuming guide and instructor. Mr. C. Gibson has proved himself to be one of the most skilful present day cultivators of the Chrysanthemum, and his record of successes at exhibitions is a long one, but he has also gained an enviable character as one of the best competitors to take a defeat in good spirit and without a murmur, though it must be admitted that he is not very often put to this test. Judging, too, by the condition of the plants and blooms, his temper is not likely to be very sorely tried this season, unless the damp weather prove more than usually injurious.

The plants are arranged in three lean-to vineries, and the majority have in consequence a light position, the blooms being raised nearly to

the glass in some cases. The collection comprises all the best of the older varieties in each section, and in addition the most reliable of recent novelties have been added, and their characters are being well developed. For instance, there are some wonderfully fine blooms of *Avalanche* which, in their present condition, would grace any exhibition stand; they are nearly 5 inches deep, and more in diameter, grand, solid examples, such as will scarcely be surpassed this year. Superb examples of *Stanstead Surprise*, *Ralph Brocklebank*, *Carew Underwood* (of high colour), *Sarah Owen* and *M. Bernard* are also noted, a late bud of the last named being remarkable for its intensely rich crimson hue. Of *Elsie*, two plants, each 7 feet high, are worthy remark, as they prove the value of this variety for decorative purposes, and so affording a supply of blooms for cutting. They have not been disbudded, and consequently bear between fifty and sixty medium sized and small flowers of a most delicate creamy tint, graceful in form, and admirably adapted for arranging with other flowers. *Criterion* is notable for the dark colour of its fine blooms, nearly as red as the sport, *Thomas Stephenson*, recently certificated. *Japonais*, *J. Délaux*, *Boule d'Or*, *Madame C. Audiguier*, *Bertier Rendatler*, *Belle Paule*, *La Triomphante*, *Amy Furze* (very fine), *M. Astorg*, *E. Molyneux*, and *Grandiflorum* are some of the most promising of the general stock, the last named not being nearly out as yet.

The incurved form an important portion of a showman's stock, in which the "old hands" take the greatest pride, and Mr. Gibson is no exception to the rule. He has a good collection of varieties, and the number of blooms is considerable, comprising of course plentiful fine examples of the "Queen family" so indispensable for "back rows" in stands. *Jeanne d'Arc* is well represented; of *Beatrice* the blooms are of exceptional depth, very clean and well developed; *Princess of Wales*, *Miss M. A. Haggas*, *Jardin des Plantes*, *Mrs. Shipman*, and *Mr. C. Gibson*, are also a few of many that are very promising. Japanese Anemones, large Anemones, and Pompons are also included, and help to make up a thoroughly representative collection, worth a long journey to see. This, at least, was the unanimous verdict of our little party of inspection, including an amiable lady amateur, an energetic Secretary, a much-travelled Judge, and the recorder of these notes. The animated Chrysanthemum discussion over the tea-table, and on the way homewards along the lampless roads of Morden, cannot, however, be reported now, as the "lady amateur" has promised to contribute something upon this matter.—RUSTICUS.

BRUNSWICK NURSERY, STOKE NEWINGTON.

IN the early days of Chrysanthemum-growing the above-named nursery contained one of the best collections of these favourite flowers to be found in this country, and throughout the district around Stoke Newington the Chrysanthemum found a congenial home. The rivalry that existed there among local growers resulted in the formation of the original Stoke Newington Chrysanthemum Society, from which has sprung the "National," that is doing so much to impart useful knowledge and encourage a taste for the Queen of Autumn Flowers. The Brunswick Nursery, from which many new varieties of Chrysanthemums found their way into commerce in former years, has in recent times been but little heard of, but under the management of Mr. J. R. Chard (well known in connection with dinner-table decorations and bouquet making) it seems likely again to rank creditably among those around London. Chrysanthemum-growing is made a specialty. Four thousand plants are this year grown in pots, the majority of them being in 6 and 7-inch ones, carrying from six to nine shoots, and a more healthy, vigorous, and handsome set of plants could scarcely be wished for, clothed as they are to the rim of the pots with thick leathery leaves deep green in colour. The varieties grown are selected for their suitability for market purposes; those bearing white or yellow flowers seem to be the most eagerly sought after, *Elaine* being one of the best. Nine hundred plants of that variety are grown, early or crown buds being taken from 200 plants. The remaining 700 are flowered from terminals. For market purposes it is not only necessary to grow the plants well, but a good deal of judgment is required to "catch" the market at the right time, hence the reason for growing some of each variety from early and some from late buds. *Avalanche* is expected to make a grand market sort; it has therefore been propagated as fast as possible throughout the summer, with the result that a fine stock of plants has been obtained, varying in height from 3 inches to as many feet. *Mlle. Lacroix* and *White Venus* are also grown in large quantities, and *La Vierge* and *Domination* are represented by hundreds of dwarf bushy plants. *St. Michael*, a bright yellow Pompon, is a great favourite, and is consequently largely grown. *William Holmes* has the reputation of being a good grower, as well as producing large flowers. Nearly a thousand plants of *Princess Teck* are grown to flower at Christmas, when they command a good price in the market. Fine stocks of *Madame Desgrange* and a few other early varieties were in flower a short time since. Several other varieties are largely grown, and when the majority of the plants are in flower the show of "mums" at Brunswick Nursery cannot fail to be a good one, for cleaner and more healthy plants could not be found, and although black fly has been unusually troublesome this season, no trace of it is seen here now. As soon as it appeared the plants were regularly syringed twice a week with an insecticide which has the advantage of destroying all kinds of insects that attack the Chrysanthemum without injuring either leaves or roots.

CHRYSANTHEMUMS ABOUT HAVANT.

THE cultivation of Chrysanthemums for large blooms has made wonderful progress during the last few years in the neighbourhood of

Havant, and it would be difficult to find a place of the same size around which so much interest is taken in the growth of this plant. As many as 5000 plants are annually grown here, although the population is only 3000 or 4000. The town is close to the water, and opposite Hayling Island, about seven miles north-east from Portsmouth, and nine miles west of Chichester, the situation in some parts of it being very low, a circumstance which is found most difficult for the growers to contend with in wet seasons in the matter of ripening the wood and in preserving the blooms from "damping." Much attention is paid to the growth of new varieties, the interest is so deep in this flower in that neighbourhood that any good new varieties are almost certain to be found there. As a rule the exhibitors confine themselves to the places on the south coast, and with success. I had lately an opportunity of paying a visit to the principal growers for the purpose of seeing what progress had been made during the present year, and as readers of the *Journal* may like to know a little of what is going on at this seasonable period, I will jot down a few notes which are made from memory.

EMSWORTH HOUSE,

The residence of Captain Boyd, has recently become noted for the growth of the Japanese varieties, to which special attention has been directed by the gardener, Mr. Woodfine, but it must not be thought that the Japanese are the only ones here grown; nearly all sections are cultivated, but these predominate here in point of quality. About 400 plants are grown annually; they are always characterised by good clean stems, which produces ample leafage, and as a rule are topped with large blooms, proving the desirability of a free growth in the production of large blooms. Prominent amongst them were *Florence Percy*, which showed its Endive-like appearance in true character, so fine were they. *Criterion* was here in splendid condition, as were also *Madame Blanche Pigny*, *Madame C. Audiguier*, *Thunberg*, *Jeanne Délaux*, *Ralph Brocklebank*, and many others, mention of which would serve no useful purpose, and which may have to be chronicled later on. Amongst the incurved were very fine blooms of *Princess of Wales*, *Jeanne d'Arc*, and *Lord Wolseley*. Extra fine specimens of *King of Crimson* and *Golden Christine* were to be seen in the reflexed section with many others.

LEIGH PARK.

On gently rising ground, one and a half mile from Havant, is situated the residence of Sir F. Fitzwygram, Bart. Mr. Penford, the gardener here, is well known as an ardent cultivator of "Mums," this year being no exception to the rule, as shown by his 600 plants, which are carrying splendid blooms. *Sunflower* is here very fine, showing its handsome drooping character to perfection. *Madame C. Audiguier*, *Edwin Molyneux*, *Val d'Andorre*, *Hamlet*, and *Charlie Sharman* are in good form, while amongst the incurved can be found capital blooms of *Refulgens*, *Nil Desperandum*, *Mrs. Heale*, *Princess of Wales*, and their two sports, *Miss M. A. Haggas* and *Violet Tomlin*, as well as capital examples of those perfectly formed varieties, *Mrs. G. Rundle*, *Mr. G. Glenny*, and *Mrs. Dixon*. Extra fine blooms of *Margouline*, *Sabine*, *Jeanne Marty*, and several others in the Japanese Anemone class were to be seen, the whole being likely to take prominent positions wherever they may be shown.

STANSTEAD PARK.

This has leaped into prominence most rapidly during the last few years as a place where fine Chrysanthemums can be seen. It is a pity their owner, E. P. Wilder, Esq., does not allow them to be seen upon the exhibition tables. Mr. Hoskins has this year grown about 800 plants, which are now developing substantial blooms. The best specimens of *Emperor of China* that it has ever been my lot to behold are here. Massive blooms they are, and the beautiful silvery white of the upper side of its florets is seldom seen as in this case. Capital blooms of *Prince Alfred*, *Lord Wolseley*, *The Queen*, *Criterion*, *Avalanche*, *F. Marrouch*, *J. Délaux*, *Soleil Levant*, *Mlle. Lacroix*, *Dr. Macary*, and many others are expanding.

Mr. J. Agate's nursery has recently sprung into prominence in Chrysanthemum world. A first-class span-roofed house has been built to accommodate the plants, and well they look in it, which contains 700 in all sections. Extra fine blooms are seen of *Avalanche*, *Edwin Molyneux*, *Etoile de Lyon*, *T. H. Spaulding*, a new American variety with broad white florets, and many other new sorts on trial, some of which promise well and others the reverse. Several new Anemone varieties look well, *M. Pankoucke*, *Nelson*, and *Sabine* being some of the best. Single varieties and Pompons are here largely favoured, and the incurved section is well represented by plants a little later in the development of their blooms.

THE OAKS, EMSWORTH.

Mrs. Smith resides here, and is evidently very fond of her garden, Chrysanthemums here being a specialty, as many as 400 or 500 being grown. Mr. Payne is a thorough enthusiast, and grows all the leading varieties as they appear in public. *Mlle. Blanche Pigny*, *Edwin Molyneux*, *Mrs. Falconer Jameson*, *Madame C. Audiguier*, *Prince Alfred*, *Refulgens* and *Lord Alcester* are in promising form.—VISITOR

CHRYSANTHEMUM STANSTEAD WHITE.

ENGLISH-RAISED seedling varieties are not too numerous, and really good additions are always welcome. Messrs. J. Laing & Sons of Forest Hill were fortunate enough to raise a batch of seedlings in 1885 which yielded several excellent novelties, including *Mrs. J. Wright* and some others that have already taken a high position amongst the best varieties. One of these seedlings was sent out in 1887 under the above

name, but it did not attract much attention until last year, when it was shown by several exhibitors in very good condition. This was particularly the case with some exhibited by Mr. F. Moor, Blerdon Hall

fine examples to the meeting of the Royal Horticultural Society's Floral Committee in the Drill Hall, Westminster, on October 22nd, but as only two blooms were shown (three being required by the rules of the Com-

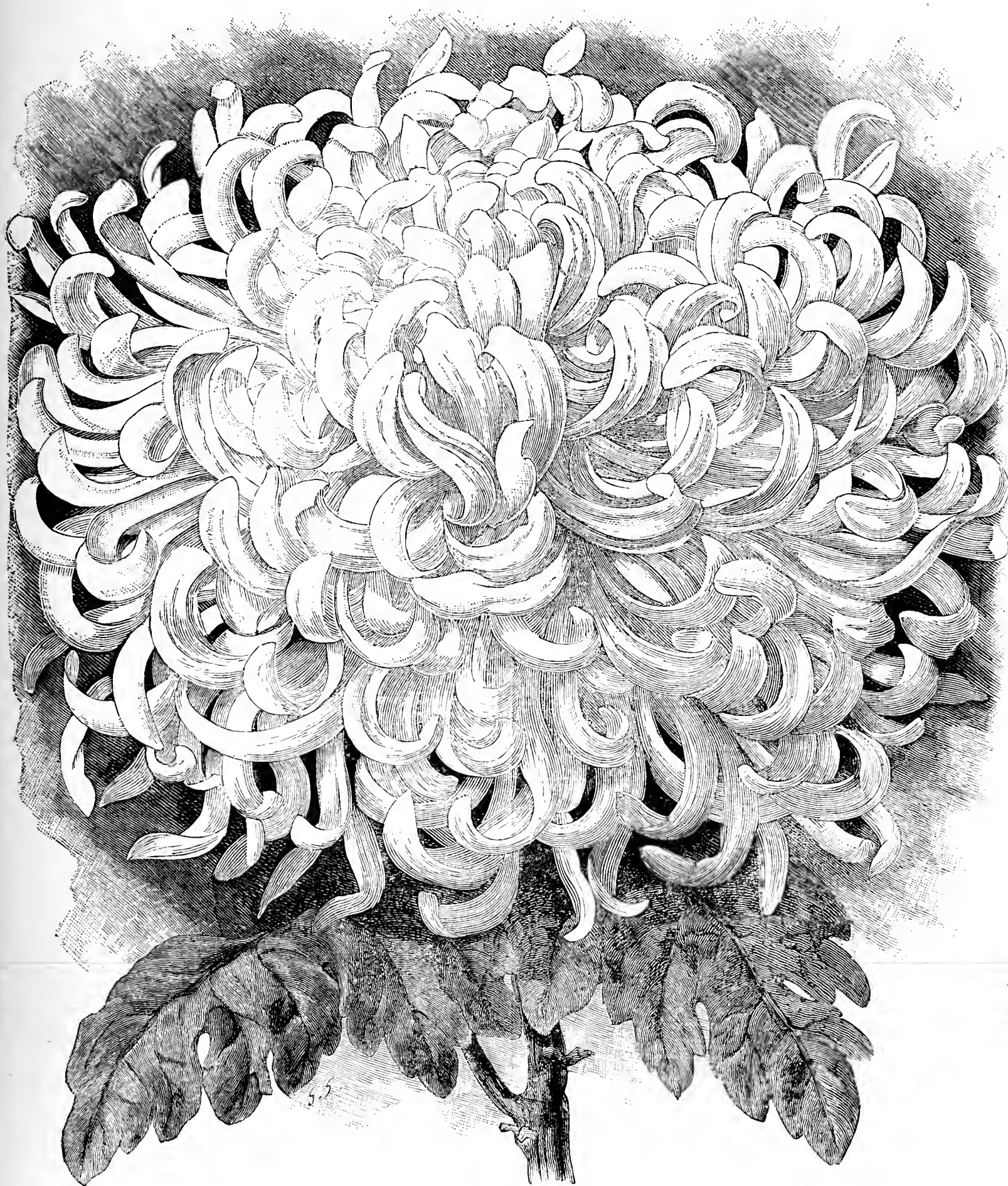


FIG. 45.—JAPANESE CHRYSANTHEMUM, STANSTEAD WHITE (REDUCED).

Gardens, Bexley, at the Kent County Society's Show, and it was evident from the quality of these that the variety would soon become a favourite with competitors. This season Messrs. J. Laing & Sons sent equally

mittee) no certificate was awarded. On the following day it was shown at the National Chrysanthemum Society's Floral Committee meeting at the Westminster Aquarium, when it was at once granted a certificate.

The variety is described in our report of that meeting, and depicted in fig. 45, somewhat reduced, for it may be added that Mr. T. B. Haywood of Woodhatch Lodge, Reigate, has blooms 12 inches in diameter.

Mr. F. Moore writes respecting the variety as follows:—"The bloom of Stanstead White, exhibited by me last season at the Kent County Show, was greatly admired. I am much in favour of the variety, and no doubt it will be seen on many boards this season. I was pleased to see its raiser gained a certificate for it last week at the National. The plant is a dwarf grower with very broad dark green foliage, and is of good constitution, but liable to come early on the crown bud, which I prefer if procured before the middle of August. The bloom I exhibited was 10 inches wide and 5 inches deep, with broad spreading florets incurving towards the centre."

A SUBJECT FOR DISCUSSION AT THE CHRYSANTHEMUM CONFERENCE.

OFTEN when thinking over the question of the widely different constitutional characteristics of the Chrysanthemum the question has forced itself on my mind, Do the raisers of new varieties pay sufficient attention to the law of "heredity" as applied to constitutional suitability or adaptability to our climate? Every year new varieties are imported from France, and America may now be expected to contribute in this direction. The raisers may be honest in the belief that their selections are good ones, but do they ever consider that some, probably many, varieties of a constitutionally gross character may be amenable to cultivation in the sunnier climate of France or that of America, but when tried here have to succumb to "the law of the survival of the fittest?" If raisers could be induced to see the question from this standpoint, and so modify their practice in cross-fertilisation and seed-saving that seed parents (on one side at least) only should be used which English cultivators have proved to be reliable in our climate, this would prove to be a step in the right direction. In proof of this view of the question, the grumbling against raisers was both loud and deep last year, because the season was one of a low temperature with little sunshine.—T. GARNETT.

CHRYSANTHEMUM SHOWS.

WE have received schedules of the undermentioned Chrysanthemum Shows, and we shall be glad to insert the dates of any not included, if the secretaries will forward us schedules of their respective Societies.

Alverstoke and Gosport, Thursday and Friday, Oct. 31st and Nov. 1st.
Royal Horticultural Society, Centenary Conference and Exhibition at Chiswick, Nov. 5th and 6th.

Brighton and Hove, Sussex, Tuesday and Wednesday, Nov. 5th and 6th.
Finchley, Tuesday and Wednesday, Nov. 5th and 6th.
Market Harborough, Wednesday and Thursday, Nov. 6th and 7th.
Kent County, Wednesday and Thursday, Nov. 6th and 7th.
Portsmouth, Wednesday, Thursday, and Friday, Nov. 6th, 7th, and 8th.
Crystal Palace, Friday and Saturday, Nov. 8th and 9th.
Kettering and District, Saturday, Nov. 9th.
St. Neots, Monday, Nov. 11th.
Surrey (Peckham Public Hall), Monday and Tuesday, Nov. 11th and 12th.

Leeds Paxton, Tuesday, Nov. 12th.
National Chrysanthemum Society (Royal Aquarium), Tuesday and Wednesday Nov. 12th and 13th.

Kingston and Surbiton, Tuesday and Wednesday, Nov. 12th and 13th.
Wells, Tuesday and Wednesday, Nov. 12th and 13th.
Exmouth, Tuesday, Nov. 12th.
Torquay, Wednesday, Nov. 13th.
Croydon, Wednesday and Thursday, Nov. 13th and 14th.
Bournemouth, Wednesday and Thursday, Nov. 13th and 14th.
West Kent (Bexley Heath), Tuesday and Wednesday, Nov. 12th and 13th.
Teddington, Putney, Chiswick, Cranbrook, and Birkenhead, Thursday, Nov. 14th.

Leicester, Friday, Nov. 15th.
Eccles, Friday, Nov. 15th.
Cheshunt, Friday, Nov. 15th.
Bolton, Friday and Saturday, Nov. 15th and 16th.
Twickenham, Tuesday and Wednesday, Nov. 19th and 20th.
Liverpool, Tuesday and Wednesday, Nov. 19th and 20th.
Cardiff, Tuesday and Wednesday, Nov. 19th and 20th.
Rugby, Wednesday and Thursday, Nov. 20th and 21st.
Birmingham, Wednesday and Thursday, Nov. 20th and 21st.
Hull (National Society's Provincial Show), Thursday and Friday, Nov. 21st and 22nd.
Chorley, Friday and Saturday, Nov. 22nd and 23rd.
Stockport, Friday and Saturday, Nov. 22nd and 23rd.

CHRYSANTHEMUM SHOW AT YORK.

MR. J. LAZENBY, 13, Feasegate, York, writes: "The Committee purpose having a stall at the above Show on November 20th, 21st, and 22nd, for the sale of flowers, fruit, and cut Ferns. The proceeds to be devoted to the Gardeners' Orphan Fund. They respectfully invite contributions for that object, which would be thankfully received. Please forward on any of the above dates."

CLIFTON HALL, NOTTINGHAM.

If anyone wishes to become truly appreciative of the beauty of Clifton and its neighbourhood he must make up his mind to spend a

whole day there. Each rocky height and each glade has a distinct charm. Approached on the one hand by its renowned grove, and near the ribbling waters of the River Trent, this little village stands unrivalled. The Hall gardens at the time of our visit were in their prime, although the third week in September had already passed. The prodigal display of bloom was no less delightful than surprising. The foliage of the grand trees was darker in tone, but they showed little or no signs of decay. The turf was close and smooth, but there were then no dead leaves to sully it, and only on one or two trees was there the faintest flush of pale gold. The whole place is remarkable for its quiet beauty and suggestiveness. The Hall itself is a grand old pile, with the silver stream, upwards of 100 feet below, which daintily threads its way through a most lovely valley.

The terrace flower garden is somewhat of semicircular form, surrounded by a broad terrace walk. On the garden side of this terrace is a steep bank of velvety turf, and on the other side extensive herbaceous borders. The beds are all geometrical in style, and are laid out on a soft and excellent carpet of turf. Spacious and well kept gravel walks intersect and surround this garden, the centre of which contains an ornamental fountain and basin, whilst by means of handsome stone steps an easy communication is maintained between it and the terrace. Some of the largest beds were filled with sub-tropical plants edged with dwarfier plants, and these do good service in the way of softening the brilliant effect produced by numerous carpet beds and others massed with Pelargoniums, Calceolarias, and ordinary bedding plants. The carpet bedding is exquisite, and the patterns tasteful and well defined. The beautiful Fern-like variegated *Polemonium coeruleum* forms an important constituent in the composition, as do likewise the various *Alternantheras*, compact growing *Lobelias*, *Coleuses*, *Iresines*, *Centaureas*, *Echeverias*, *Sedums*, and others too numerous to mention. Ascending the terrace steps, we were at once struck with the beauty of the scene. The great conservatory or winter garden was before us, and a full view of the flower garden was obtained. At this point the busy town of Nottingham may be seen in the distance, with its historic castle standing upon its time-worn rock. A long row of venerable Yews arrested our attention. Here have they stood for hundreds of years steadily growing and spreading, till they have become venerable and claim our reverence. Near here are three large beds (star-shaped), which were chiefly devoted to *Clematises* Jackmani and Lady Bovill. They were very effective, and quite in harmony with the surroundings. In isolated positions on the lawn are pretty examples of *Araucaria*, *Wellingtonia*, *Cupressus*, and other choice shrubs, whilst amongst deciduous trees *Acer Negundo* is effectively used. Near also is a quaint old ruin, known as the chapel, which is covered with luxuriant Ivy, hiding the injuries inflicted by man, and shielding it as far as in its power from time the destroyer.

Passing along, the small herbaceous garden is reached. A bed of the beautiful Windflower, *Anemone japonica alba*, crowded with delicate snow white flowers, and from the centre of the bed sprang the brilliant scarlet Cactus *Dahlia Juarezi*. There are many objects of interest in this part of the ground, but space will not permit of their enumeration. But it is impossible to look without admiration on the little scene that lies before us—rocks and dells, woods and groves, sunshine and shade, the mossy rock surfaces half clothed with varied vegetation, and presenting the utmost richness of colour. The remnants of several old Larch are richly mantled with Ivy, and their tangled mass remains as it were a memoir of the past.

The kitchen gardens were reached at last, and we were conducted by the gardener, Mr. Anderson, to the vineries, of which there are two, and grand examples of good culture did we find. Golden Queen we have never seen in better condition. Its constitution seems robust, the leaves are of great substance, and we could not help noticing the strikingly handsome appearance of the bunches. The flavour is superior, and altogether its character is irreproachable. Mrs. Pince is well grown at Clifton, many of the bunches being perfect examples. Some massive bunches of Black Hamburgh, Alicante, Muscat of Alexandria, Gros Guillaume and Lady Downe's were very noticeable, and bear every indication of good culture. The houses are span-roofed with ends facing south; they are built with arched foundations, the Vines are planted inside the houses, and are grown upon the single-rod principle. There are numerous other houses near here devoted to Peaches, Roses, and other plants, but the principal plant houses are situated in another part of the kitchen garden. A small but choice collection of Orchids is grown, some fine *Calanthes* being worthy of notice, large pseudo-hulbs just throwing up very strong flower spikes. We also noticed several fine healthy pieces of *Cypripedium Lawrenceanum*, *Cypripedium Spicerianum*, and *Cypripedium caudatum*.

In one of the plant stoves is a huge *Allamanda Hendersoni* carrying hundreds of highly coloured flowers. Table plants are well grown, and a large supply is needed for the embellishment of the Hall. Clifton has long been noted for its collection of Pears, and many of the wall trees are heavily laden with fruit of superior quality, Pitmaston Duchess, Marie Louise, and Beurré Diel being especially worthy of mention. Apples are a heavy crop, Blenheim Pippin, Spencer's Favourite, and Pike's Pearmain carrying heavy crops.

The large ornamental conservatory near the Hall contains a valuable and highly interesting collection of plants. This noble structure runs along the entire front of the flower garden. The interior of the roof is profusely draped with creepers, the beautiful *Tacsonia Van Volxemi* hanging in graceful festoons, and the back wall is richly clothed with the lovely *Asparagus plumosus nanus*, which has already attained a height of over 20 feet. Several of its growths have taken possession

of the chains which suspend the ornamental baskets from the roof. Another interesting plant of great beauty which has attained a height of more than 20 feet is *Ruscus androgynus*, which Mr. Anderson uses very freely in a cut state for decorative purposes. Several wire arches span the principal path, and nothing could be more lovely than the way in which they are utilised. The pretty *Abutilon vexillarium variegatum*, with its mottled or marbled foliage, hangs gracefully from one, whilst another is richly wreathed with the sweet-scented *Solanum jasminoides*, and several others with *Asparagus plumosus*. Another striking feature is to be found in a noble example of *Brugmansia suaveolens*, laden with large, sweetly-scented flowers. The centre bed is devoted to rare Palms, Musas, Dracenas, Camellias, Rhododendrons, and other plants, whilst upon the front stage a display of *Celosias*, *Gloxinias*, Tuberous *Begonias*, *Fuchsias*, and a host of other plants contribute to a very effective display. There is a fountain in the centre of this house which when in full play imparts a coolness and freshness to the whole place. The respected owner, Henry Markham Clifton, Esq., J.P., is to be congratulated upon its possession, and the gardener, Mr. Anderson, upon its excellent keeping.—J. H. WALKER.



EVENTS OF THE WEEK.—A busy season is now commencing, and during the next fortnight or three weeks there will be abundant to occupy the time and attention of those in any way concerned with *Chrysanthemums*. To-night (Thursday), at eight o'clock, a concert will be held in the Vestry Hall, Chiswick, in aid of the Gardeners' Orphan Fund. On Tuesday, November 5th, the Royal Horticultural Society's *Chrysanthemum* Centenary Exhibition and Conference will be opened in the Chiswick Gardens. On the same days Shows will be held at Brighton (Sussex), which is expected to be unusually good this year, at Brixton, and Finchley. Upon the following day (Wednesday, November 6th) Shows will be opened at Portsmouth and by the Kent County Society, both of which are likely to possess considerable interest and importance.

— WE record with much regret the death of MR. WILLIAM GODWIN of Kiln Bank, Market Drayton, which occurred on October 17th last. Mr. Godwin was in his eighty-ninth year, and had been the proprietor of Kiln Bank Nurseries for seventy years. He has always taken a great interest in the scientific and literary departments of the pursuit, and was a close reader of the *Journal of Horticulture*. He was a great fruit fancier as well as a naturalist and sportsman.

— **FRUITERERS AND THE LORD MAYOR.**—The Masters, Wardens, and Court of the Fruiterers' Company recently waited upon the Lord Mayor at the Mansion House, and admitted him to the freedom and livery of their Guild and to membership in their Court, in recognition of the laudable efforts he had initiated for the improvement of fruit culture throughout the country. The Master (Mr. R. S. Mason) mentioned that in the long history of the Guild there was no previous instance of a person being admitted in one day to the freedom, livery, and Court of the Company, and they intended the Lord Mayor's admission as a personal compliment to him in grateful appreciation of his great interest in fruit culture. The Lord Mayor thanked the Company for the honour they had paid him, and said it was his firm belief that fruit farming and the cultivation of orchards might be profitably revived throughout the country, and that instead of importing so much of our fruit from foreign countries it might be grown here with profit to the farmer and with advantage to the public.

— **NATIONAL AURICULA AND CARNATION AND PICOTEE SOCIETIES (SOUTHERN SECTION).**—The name of Baron Schröder should be added to the Patrons of the above Societies, and the Treasurer's balance in favour of the Carnation Society is £4 17s. 11d., and not £4 7s. 5d., as stated by the Treasurer at the recent annual meeting.

— **TRADE ANNOUNCEMENT.**—We learn that after November 1st, Mr. B. S. Williams of Upper Holloway will trade as Messrs. B. S. Williams and Son, Mr. H. Williams having formally entered the firm.

— **GARDENING APPOINTMENTS.**—Mr. Charles Foster, late foreman in the gardens of A. H. Smee, Esq., Hackbridge Grange, Carshalton, under Mr. G. W. Cummins, has been appointed gardener to E. P. Martin, Esq., Dowlais House, Dowlais, Glamorganshire. Mr. M. E. Mills,

recently second gardener to Baroness Heath, has been appointed head gardener at Coombe House, Croydon.

— READERS of the Journal will be pleased to hear that the WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY has been successfully established. It will be conducted by rules similar to those of the Chiswick Society. Stanley Gray, Esq., is President, and Mr. J. B. Riding Hon. Sec.

— **PRESTON AND FULWOOD HORTICULTURAL SOCIETY.**—The twenty-fifth monthly reading (third of the present season) in connection with the above Society will be given in the large room of the Castle Hotel, Market Place, Preston, on Saturday evening, November 2nd, when Mr. Councillor Jos. Harding will read his paper on "Landscape Gardening in its Relation to Villas, Public Parks, and Cemeteries." Chair to be taken at 7.30 by the President.

— MR. J. HIAM offers a timely hint on BULLFINCHES. He says from now to Christmas is a suitable time to catch and keep these birds, but does not tell us how. I have not been a reader of the Journal for so many years as ten. I should be glad if he would give some particulars now as to their capture and keeping, as they are a great pest, they and linnets, to gardeners and cottagers in this district. His manner of dealing with rats I consider first class and practical.—M. DAVIDSON, Bolton.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.—This American variety which has attracted so much attention, is now flowering in Mr. T. S. Ware's nursery, Tottenham, and shows its peculiar character remarkably well.

— **MEDALS FOR INDUSTRY.**—Mr. J. Wright's idea, page 308, respecting awarding medals, &c., to meritorious horticulturists other than "showmen" has long been in operation in connection with what are known in the gardening world as the "Neil" prizes. I cannot lay my hands on the particulars of them at this moment, but I think they amount to £60 every three years, and this sum has been awarded in several instances to gentlemen rarely heard of at shows.

— **CLASS EXHIBITS.**—I am very partial to these, as they give one the opportunity of judging collectively, and making selections without having to trust to descriptions. The collections of Apples shown at Edinburgh on September 11th, and before the Royal Horticultural Society on October 8th by Messrs. Veitch, are typical of what I mean, and all who wish to produce striking and instructive displays should follow this system.—PRACTITIONER.

— **IMPATIENS HAWKERI.**—*Impatiens SULTANI* is a familiar plant to many, but *I. Hawkeri* is a finer plant, and when properly grown gives a profusion of good sized rich rosy carmine flowers. It can be raised from cuttings in a gentle heat at any time after February, but over-potting and over-feeding must be avoided. Still, when the pots are full of roots a little liquid manure may be used. For compost use good turfy loam, leaf soil, and sand, and do not expose the plants to much sunlight, or the young flower buds get cramped. Ordinary greenhouse culture suits it through the summer, and it is everybody's plant.—D. S. H.

— **REFERRING to query in last issue by "J. L." as to the BEST PINK BEDDING ZONAL PELARGONIUM, Mrs. Turner, which he mentions approvingly, is one of the finest bedders we ever sent out, but is losing favour at the present time, as the ladies have set their faces dead against any flower which has any suspicion of magenta or mauve in it. The best of the rosy pinks which are free from the objectionable shade is Mrs. A. Miles, but I think this and all the older varieties will be put in the background by the sport obtained by Mr. Crocker, which was described in your columns some few weeks back.**—CHAS. E. PEARSON, Chilwell Nurseries, Notts.

— **PEACHES.**—Will those that have grown Waterloo and Alexander Peach kindly say if these are synonyms, or whether there is any difference in time of ripening, as we intended adding Waterloo to our house, where Alexander is already grown. Thames Bank Peach out of doors is very fine here; the most showy yellow Peach we have. It has been greatly admired for colour and flavour. We think the pinch of dark sulphur in soft water (copied from *Journal of Horticulture*) has cured our mildewed Roses indoors, where air must be given, also on Vines and *Chrysanthemums*. It has proved simple but effective, and we intend trying it on Peas another year. We believe it will cure cases where mildew has hitherto been the master.—H. GALTON, Gardener to Sir Chas. Frederick, Bart.

— THE GARDENERS' ORPHAN FUND.—The usual meeting of the Committee took place at the Caledonian Hotel, Adelphi, on October 25th, Mr. George Deal in the chair, there being a good attendance of members. The minutes of the last meeting having been read, the Hon. Secretary announced there was a balance at the bank of £424 17s. 10d. Some receipts from special sources were announced, including £6 10s. from Mr. W. Wildsmith, Heekfield Gardens, on the occasion of opening the gardens; £2 12s. from Mr. W. H. Divers, Ketton Hall, on the same occasion, but the day was wet; £4, the proceeds of a concert at Swallowfield, from Mr. C. W. Allen; and £1 from Mr. J. Wallis, Keele Hall Gardens, a portion of the offertory on the occasion of the harvest festival. The following donations were announced:—Mr. J. Broome, Llandudno, £5; Messrs. Oakshott & Mil'ard, Reading, £2 2s.; Mr. T. B. Potter, M.P., £1; and money boxes as follows: Mr. G. Milford, Egerton Lodge, Melton Mowbray, £3; Wakefield Paxton Society, £2 10s.; Mr. J. Miles, Southampton, 21s.; Mr. R. Greenford, Priory Gardens, Warwick, £2 1s. 3d.; Mr. C. Sutton, Chevening Park Gardens, 12s.; Royal Horticultural Gardens, Chiswick, 5s. 3d.; Mr. W. A. Green, Wolverhampton, 3s. 7d. The quarterly allowance to children upon the Fund, £61 15s., was ordered to be paid, and a sum of £300 placed on deposit at the bank. It was announced that the sum of £3025 19s. 10d. has been invested. The proceedings closed with a vote of thanks to the Chairman.

— A FINE CAMELLIA.—There is a wonderful specimen of a double white Camellia at The Henburys, Moseley, Birmingham, the residence of G. F. Lyndon, Esq. This tree has been at The Henburys fifty years, and was supposed to be from fifteen to twenty years old when placed there. It is growing in a box 6 feet square and 3 feet deep, and stands on a revolving plate, so that the tree can be readily moved round to face the front of the conservatory. The tree is 18 feet high, and was 24 feet high, but getting too tall for the house 6 feet of the top was cut out some few years since. It is 18 feet through, and is clothed with free healthy growth to the bottom. It is in the best of health, with a profusion of large dark green foliage, and has at least 3000 buds left upon it, a very large number having been taken off. The tree is symmetrical in growth, and I doubt if a finer specimen exists.—ON-LOOKER.

— THE fortnightly meeting of the READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION was held at the British Workman on Monday evening (October 28th), when a good number of members assembled to hear a paper entitled, "How to Prolong the Season for Some of the Most Popular Vegetables," by Mr. Chas. Hott of Wokefield Park. Mr. Wm. Lees presided. The vegetables dealt with were Peas and French Beans, Seakale, Asparagus, Cauliflower, Horn Carrots, Globe Artichokes, and Vegetable Marrows. Some good French Beans and Improved Ne Plus Ultra Peas were exhibited, gathered on Monday from the open ground, which proved that the season for these vegetables may be prolonged very considerably by protection. A discussion followed, at the conclusion of which Mr. Hott was heartily thanked for his able paper. Mr. J. Woolford exhibited some good pans of *Pleione lagenaria* and *P. maculata* from Mr. Alfred Palmer's collection. These, interspersed with Maidenhair Ferns, had a very pretty effect. A vote of thanks was accorded.

— FLOWERS IN KIRKCUDBRIGHTSHIRE.—The following are in flower to-day, 28th October, in my small garden close to the Solway:—Perennials: Dahlias, Phloxes, Pyrethrums, Chrysanthemums, Gaillardias, Anemones, Violas, Pentstemons, Aubrietias, *Alyssum saxatile compactum*, *Arabis alba*, *Hypericum reptans*, *Linaria anticaria*, *L. alpina*, *Sedum spectabile*, *Geum coccineum* fl. pl., Asters, *Crocus longiflorus*, *C. suaveolens*, Roses, *Primula cashmeriana*, *Papaver nudicaule*, *Campanula pyramidalis*, *C. carpatia*, *C. persicifolia alba*, *Armeria plantaginea*, *Onosma taurica*, *Myosotis*, *Gladioli*, *Oenothera taraxacifolia alba*, *Polyanthus*, Primrose, double Lilac, Oxlip, *Rudbeckia Newmanni*, *Potentilla nepalensis*, *Lithospermum prostratum*, *Hieracium aurantiacum*, *Antirrhinum*, *Agrostemma coronaria alba*, *Erica vagans alba*, *Iberis stylosa*, *Orobis*, Hollyhoek, *Fuchsias*, *Jasminum nudiflorum*. Annuals: *Chrysanthemum coronarium*, *Calendulas*, *Coreopsis*, *Nemesia compacta*, *Saponaria calabrica*, *Tropaeolum majus*, French Marigolds, Mignonette, *Alyssum maritimum*, and *Ionopsidium acaule*. The Colehums are out of bloom, having flowered unusually early, *C. variegatum* being the first, opening August 18th, and *C. autumnale* opening August 20th. *Crocus Boryi* and *ochroleucus* will be in flower in a day or two, and *C. Imperati*, *C. Sieteri*, and *C. biflorus* are all above ground.—S. ARNOTT.

— COMMERCIAL BOTANY.—It would be impossible to form any correct idea of what has been attained in the knowledge of plants, useful or otherwise, without referring to the results of the principal expeditions which have left our shores for different parts of the world during the present century, such, for instance, as Ross's Antarctic Expedition, which resulted in "The Botany of the Antarctic Voyage of H.M. Ships Erebus and Terror, in the years 1839 to 1843," by Dr. (now Sir) J. D. Hooker; or Captain Kellet's voyage of the Herald, after which appeared "The Botany of H.M.S. Herald during the years 1845 to 1851," by Berthold Seemann; or in still later times Captain Nares' Challenger Expedition from 1873 to 1876, the botany of which occupies two large volumes, principally the work of Mr. W. B. Hemsley, F.R.S. Not that these expeditions have resulted directly in the introduction of any one useful plant either for general culture or commerce, but they have been instrumental in imparting a knowledge of the resources of the several countries visited, and in this way have awakened an interest in them. Important, indeed, as these expeditions have been in elucidating the botany of the world, still more so has been the formation of the several museums in the principal centres of the United Kingdom for the especial purpose of developing the economic resources of the vegetable, animal, and mineral kingdoms, such as the food collection, first at South Kensington in 1857, and later at Bethnal Green, the Industrial Museum at Edinburgh, and the Museums of Economic Botany at Kew, founded in 1847. These, together with the Royal Botanic Society of London, founded in 1839, and the Pharmaceutical Society of Great Britain, founded in 1841, must always be considered the centres from which knowledge on these points has flowed, and continues to flow. Nor must we forget the several International Exhibitions since 1851, where the vegetable resources of the globe, especially of our colonies, have been prominently brought to the notice of millions of people. Then, in connection with these museums and exhibitions is the literature which emanates from them, such as the handbooks and guides, in which, though published mostly for a few pence, a mass of valuable information is given. We cannot leave this part of the subject without a word of high commendation on the handbooks and catalogues issued by the several colonies at the Colonial and Indian Exhibition of 1886, which should be in the library of everyone interested in economic botany.—(*Cassell's "New Popular Educator."*)

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual dinner of the above Society was held at the Cannon Street Hotel on Wednesday, October 23rd, at 6 P.M., N. N. Sherwood, Esq., presiding. There was an excellent attendance of members and friends, 140 being present, and the Chairman was supported by Mr. H. J. Veitch, Mr. W. Nutting, Mr. Cavendish, Mr. J. Laing, Mr. W. Paul, Mr. T. S. Ware, Mr. G. Deal, and Mr. E. R. Cutler. Amongst others present were Messrs. F. Berry, R. J. Chard, N. Cole, W. Cummins, J. George, J. Hudson, S. Mortimer, W. Rapley, S. Summers, E. G. Wheeler, G. Wheeler, and J. Wheeler, A. F. Barron, W. G. Head, C. W. Goldsmith, G. Stevens, E. Butts, Norman Davis, W. Thompson, G. Gordon, L. Castle, B. Wynne, and the Secretary, W. Collins, 9, Martindale Road, Balham. The programme was a long one, perhaps somewhat too long, and the speeches, with few exceptions, were not correspondingly brief, but what may be termed the more serious business of the meeting was most pleasantly varied by an admirable selection of songs well rendered by Miss Mary Belval and her friends.

The customary loyal toasts were duly honoured, and then the Chairman proceeded to the toast of the evening, "The Prosperity of the United Horticultural Benefit and Provident Society," and in the course of his speech he reviewed the origin and history of the Society, the scope of its work, and its constitution, referring in terms of the highest commendation to the respective funds and the rules guiding their application. He mentioned incidentally that as a result of the good working of the Institution it was a notable fact that some members had £50 or £60 standing to their credit, that there are at the present time no sick members on the list, and the total number of paying members is now over 300. The Society was doing, he considered, a great amount of good in encouraging men to make some provision for rainy days, a duty to which everyone should give attention early in life. Mr. Sherwood pointed out the respective advantages of the Benefit and Benevolent funds, but remarked that he thought another was needed—namely, "a convalescent fund," which would make some provision for gardeners who were not in a sufficiently good state of health to perform their duties for a time, and yet not absolutely ill, or when they were recovering from an illness. It was simply an idea of his own, and if the Committee thought it desirable to establish anything of the kind he would be happy to contribute 25 guineas as a start. He also stated that Baron Schröder had offered a 5 guinea donation to the Society, and an annual subscription of 1 guinea, both statements being received with loud applause.

Mr. N. Cole responded to this toast, and Mr. H. J. Veitch followed

with "The Health of the Chairman," proposed in his usual felicitous manner, and Mr. Sherwood acknowledged the compliments in fitting terms, mentioning that Mr. E. R. Cutler, the veteran Secretary of the Gardeners' Royal Benevolent Institution, had been requested to take the chair next year.

Mr. Hudson proposed "The Honorary and Life Members," to which Mr. William Paul replied in an interesting discourse upon the difficulties of gardeners and the progress of recent years.

Mr. R. Dean performed the task of thanking the Trustees, duly acknowledged by Mr. J. Wheeler. "The Health of the Secretary," Mr. W. Collins, was honoured in the same way, and with various other toasts, including the hearty thanks of all present to those who had contributed flowers and fruit so liberally for the decoration of the table, an agreeable evening was brought to a close. It may be added that the tables were most tastefully decorated under the supervision of Mr. Chard, and some elegant bouquets were presented to the lady vocalists and Mrs. Cutler.



CLIMBING NIPHETOS.

I WAS told the other day that this variety is capable under good treatment of making shoots 16 feet or more in length during the season, and that it will break from the eyes along such shoots and flower freely. Is this its character? Is it a free bloomer? On what stock does it appear to do best? The experience of those who have grown it during the past season, with some details of its behaviour, would prove invaluable to many readers besides myself.

ROSES FOR CHRISTMAS.

For flowering at Christmas I have not yet been able to select a variety that will supplant either Safrano or Isabella Sprunt. They are both profuse flowerers, good growers, and bear early forcing without much injury. Plants intended for this purpose should have been pruned and in a liberally ventilated position; indeed, if exposed to the recent frosts all the better. By the time this appears in print the house or pit in which they are to be forced should be closed. If the Roses are planted out in a permanent bed the soil should be top-dressed with rich material and then thoroughly soaked with tepid water. Keep the ventilators closed and maintain a night temperature of 50°. If the plants are grown in pots keep them in a similar temperature until they display signs of moving. In this stage they can be transferred to a house or pit in which a gentle hotbed has been formed of Oak or Beech leaves. The gentle heat from these will be ample to excite them into growth. If aphides have existed upon the plants, the house in which they are grown or to be forced should be thoroughly fumigated with tobacco smoke. All traces of these insects should be eradicated before the plants start into growth. The tender foliage of Roses is easily injured by tobacco smoke; in fact, the quantity necessary to destroy green fly will frequently injure their tender foliage during winter and early spring.

ROSES FOR NOVEMBER AND DECEMBER.

As a rule useful flowers for cutting during these months are not so plentiful as during the early months of the year. All outside flowers are over by the end of October, and without special provision there is a break during the two following months. The old *Souvenir de la Malmaison* is suitable for flowering from the middle of October until nearly the end of the following month. For this purpose the plants should be grown in pots outside and housed early in October. It is necessary to give them a temperature of 50° to 55°, in which they open their flowers freely. Naturally this variety flowers freely in autumn, and can with a little care be as well grown in pots for this purpose as when planted in beds and borders outside. Plants on their own roots should be potted at the present time, and given a little more root room than would be necessary for H.P.'s, or the plants can be placed into larger pots towards the end of June or early in July. If unduly confined at their roots they discontinue growing and fail to start freely from the base. One good shoot from the bottom will produce a dozen or more blooms. It likes a lighter soil than is good for H.P.'s; in fact, a compost that is suitable for Tea varieties will suit it well. It does well in good loam, moderately light, to which is added one-third of leaf mould and one-seventh of decayed manure. When plants are grown specially for autumn flowering they must have through spring and summer as nearly natural treatment as possible. Protection in frames from severe frost only is needed, and if pruned towards the end of March and plunged outside they will flower profusely in autumn. In pruning cut them hard back. The first blooms may not be so plentiful as if they were not pruned hard, but it induces them to push strongly from the base, and considerably more flowers in autumn will result.

To follow this variety it would be impossible to select two more suitable than those advised for flowering at Christmas. Young plants of *Niphetos* raised in spring or second season plants will flower freely enough during November if they are given liberal root room and

encouraged to grow. As buds only can be expected during the declining months of the year it is questionable if for quantity *Safrano* and *Isabella Sprunt* can be surpassed. For small glasses, buttonholes, and sprays these are very suitable. They root freely, and for this purpose plants struck in spring and grown on in pits throughout the summer, and then planted out in Cucumber or Melon houses towards the end of September are suitable, and will yield quantities of their choice delicate flower buds. Old Cucumber and Melon soil will do for them, with the addition of one-third leaf soil. They should be planted thickly together, and encouraged to grow by maintaining a gentle warmth about them from the time the night temperature shows signs of falling below 50°.

MARECHAL NIEL IN WARM VERSUS COOL HOUSES.

For a long time we were under the impression that the stock upon which this variety was grown influenced the colour of the blooms in no small degree; but when the colour of the flowers differed widely from those of plants on their own roots we were compelled to modify this opinion, and look to other causes than the stock. The position in which the plants are grown and the temperature of the house has more to do with the colour of the flowers than the stock. Plants that are grown almost naturally in the greenhouse are much paler in colour, as a rule, than those that are grown in a warm structure. For the production of highly coloured flowers the plants should be assisted by gentle heat to make and complete their growth as early in the season as possible, so that the wood will become hard and firm. Wood of moderate strength that is brown and thoroughly matured will produce flowers of a large size and good colour, while strong unripened wood will produce those of the very palest colour. Plants that were cut back after flowering and given greenhouse treatment only are still growing vigorously. Some of the shoots are strong, soft, and unripened. Although some of them are 20 feet or more in length they have not that firmness about them that one would desire for yielding the finest type of blooms. Plants in various gardens that have come under my notice vary largely, both in the colour and size of their blooms; but I have invariably noticed that those which have a somewhat stunted appearance, and make firm, short-jointed, hard wood of moderate strength yield large well-coloured flowers. These plants are, as a rule, liberally supplied with liquid manure, and very rarely die from canker. A plant on its own roots in a cool house, a portion of the growth being trained near the top on the back wall of a vinery, is a striking illustration of what warmth will do towards ripening the wood and influencing the size and colour of the flowers. The flowers produced from that portion in the cool house are pale in colour and small in comparison to those from the portion in the vinery. Experience and observation have led me to the conclusion that if *Maréchal Niel* were assisted by warmth to make an early growth and ripen it thoroughly the results would be more satisfactory in many gardens than they are at the present time. —NORTHERNER.

AN INCONSOLABLE JACKDAW.

WE have a handsome and intelligent Jackdaw. It was taken from the nest last spring and given to my youngest girl, who is immediately in touch with living Nature. When absent during school terms the Jackdaw is cared for by the cook, a young woman of gentle and just disposition, to whom the bird attached itself strongly. Last week she left to be married. She had grown so fond of the jackdaw meantime that she would willingly have taken him away with her, but then its own young mistress mentioned her pet in every letter, imploring that he might be kept. Jack is not so popular generally as with my daughter and cook. On the morning of the day (last Monday) that cook left, after she had gone I went into my bedroom on the ground floor with broad stone slabs and round bay window; there sat Jack. I spoke to him, no reply. He does say a great deal usually in jackdaw croaks, and even tells us "Jack talks," "Come along," &c., but he made neither sign nor sound, and in a minute or two flew on to a low close-clipped Yew hedge, where in happier days he used to saunter about in the sun. Evidently he could not bear to be sympathised with, and soon disappeared altogether, getting into some higher shelter in another part of the garden lonely and silent. All day he remained there, resisting every attempt to have him down, and he spent the night out of doors in a still higher tree. So for twenty-four hours he remained without food.

Next morning he was got down, put into his wicker, and well fed, but imprisoned for a day or two. Then his wings were cut, he was released, his bath was prepared for him as usual. He began to seem more himself, talks a little, and follows me as he always does closely about the garden, with all a jackdaw's quaint curiosity. —A. M. B.

THE SOURCES OF THE NITROGEN OF VEGETATION.

No problem relating to the nutrition of plants has given rise to so much discussion as that of the source of their nitrogen and the methods of its assimilation. It is obviously both a matter of the highest scientific interest, and also, owing to the high price of combined nitrogen in manures and the comparative ease with which it is washed out of the soil in the form of nitrates, one of great practical importance to the agriculturist and the community.

Ever since the discovery of the composition of atmospheric air by Priestley, Scheele, and Lavoisier, the question as to whether plants were able to absorb and utilise free nitrogen has attracted much attention.

At the end of the last century, or beginning of this, Ingenhousz, Sennebler, Woodhouse, and De Saussure became interested in the subject. Boussingault commenced his experiments in 1837; Ville, whose results conflicted with those of Boussingault, in 1849; and, shortly after, this last named investigator started a new series of experiments which confirmed his former conclusions that plants, under the conditions of the experiment, were not able to assimilate free nitrogen.

In 1857 experiments on the assimilation of free nitrogen by plants were started at Rothamsted; and in 1861 was published in the Philosophical Transactions, the classical memoir of Lawes, Gilbert, and Pugh, on this subject. In this earlier paper a brief history and summary of the results of other experimenters is given, and then the recent results obtained at Rothamsted. The conclusions arrived at were identical with those of Boussingault, that there is no evidence that plants assimilate nitrogen. Still the authors allowed that there were some difficulties with regard to the supply of nitrogen to leguminous plants, which assimilate from some source or another much more nitrogen than gramineous plants under similar conditions of supply of combined nitrogen. It was admitted that, "if it be established that the processes of vegetation do not bring free nitrogen into combustion, it still remains not very obvious to what actions a large proportion of the existing combined nitrogen may be attributed."

These views, that plants were unable to assimilate free nitrogen, were widely and generally held for many years, though there have always been some dissentients. In the meantime, however, the indefatigable investigators of Rothamsted have not been resting in the matter, but have added much to our exact knowledge of the supplies of combined nitrogen to the soil from the air, on the amount and nature of the combined nitrogen in soils and in crops, on the processes of nitrification in soils, and the amount of nitrogen removed from soils in crops and in drainage. During the last few years the main question as to the availability of atmospheric nitrogen to plants has taken a somewhat different aspect: it is now often suggested that though the higher plants are unable to directly take up free nitrogen, yet indirectly it is brought under contribution in some way; the ways most generally favoured being either under the influence of electricity of low tension, or of microbes or some low forms of organisms; and by such means it is thought that nitrogen is brought into a form in which it is useful to the higher plants.

In Sir J. B. Lawes and Dr. Gilbert's new memoir ["On the Present Position of the Question of the Sources of the Nitrogen of Vegetation, with some New Results, and Preliminary Notice of New Lines of Investigation." By Sir J. B. Lawes and Prof. J. H. Gilbert. Phil. Trans. 1889., clxxx. B. pp. 1-107.] they give a summary of some previously published Rothamsted results, chiefly relating to nitric acid in soils and subsoils; also of the results of Cameron, S. W. Johnson, Hampe, Wagner, and Wolff, on the assimilation of nitrogen by plants, from more or less complex organic bodies like urea, uric acid, hippuric acid, and tyrosine. A number of new determinations of nitric acid in soils and subsoils, and of total combined nitrogen in the surface soils of the Rothamsted experimental plots are given; and also the results of numerous experiments with dilute solutions of organic acids on soils, to ascertain the action of such dilute acids, in some degree comparable to the acid sap of the roots of plants, on the organic nitrogenous matter of soils. In the second part of the memoir are summarised the recent results and conclusions of other workers relating to the fixation of free nitrogen.

Probably the results of Berthelot, which have from time to time been published in the *Comptes Rendus*, have influenced the opinions and the course of inquiry in recent years more than any others. In 1876 and 1877, Berthelot found that various organic compounds, under the influence of the silent electric discharge, even of low tension, were able to fix free nitrogen, and concluded that such fixation of nitrogen takes place in ordinary soils under normal conditions. In 1885 he published results showing the fixing of free nitrogen by certain soils under conditions which led him to believe that the action must be due to the influence of micro-organisms, and to such action M. Berthelot seems now inclined to impute most influence in the matter. Although the gains in nitrogen, expressed in per-centages, were very small, yet there was gain in all cases when the soils were exposed either in the open, or in a room, or in closed flasks, and no gain when the soils were sterilised. Unless there be some unrecognised source of error, such as might easily be imagined in the case of the freely exposed soils, one seems bound to accept Berthelot's conclusions. Dehérain's results at Grignon are next discussed; they are chiefly on the gains or losses occurring on experimental field plots, and are perhaps not of such a nature as to materially assist one at the present stage of the inquiry.

Joulie's results, as given in the *Bulletin de la Société des Agriculteurs de France* in 1886 showed exceedingly large gains of nitrogen, which he is inclined to ascribe to the action of microbes; here the gains of nitrogen were certainly more than take place in ordinary farm practice, and occurred with Buckwheat, which is not usually considered as a "nitrogen collector."

Dietzell's experiments are mentioned; in all cases but one, in which there was a slight gain in nitrogen, the results are fully accordant with established facts. B. Frank, who has recently written a paper on the whole aspect of the question, has published some experiments of his own. He concluded, as have others, that two opposite actions are at work in the soil—one setting nitrogen free, and the other bringing it into combination, the latter being favoured by vegetation—but that there is no decisive evidence to show how this combination is brought

about; it does not necessarily follow that the plant itself effects the combination. Some of Frank's experimental conditions, however, were considerably removed from those occurring in the ordinary course of farm practice.

The very important and most interesting experiments of Hellriegel and Wilfarth follow. The first of these were described at the Berlin meeting of the *Naturforscher-Versammlung*, in 1886; subsequent experiments were described at the Wiesbaden meeting in 1887, and they were further given in a paper by König, published in Berlin in 1887; but the full text and details of their work were not published in time for Messrs. Lawes and Gilbert to refer to. A paper on these results appeared last November in *Beilageheft zu der Zeitschrift des Vereins für die Rübenzucker-Industrie*, and the work of these investigators is described by M. Vesque in the January number of *Annales Agronomiques*.

The experiments date from 1883 onwards, and were on cereals, Buckwheat, Rape, and various leguminous plants. The plants were grown in pots in washed siliceous sand, to which the necessary cinereal constituents were added. In this all the plants grew normally until the nitrogen in the seed was used up; then the plants not belonging to the Leguminosæ ceased growing until supplied with some combined nitrogen, nitrate of soda was used, when growth was proceeded with almost exactly in proportion to the amount of nitrogen supplied. With the Leguminosæ the results were more eccentric; sometimes the plants died of nitrogen-hunger; sometimes after a time of such hunger they recovered and produced abundant growth. To the sterile soil with the young plants there was added in a large number of cases a small quantity of an extract of a garden soil; the extract used contained less than one milligramme of nitrogen; the Oats, Rape, and Buckwheat remained undeveloped, but the leguminous plants soon became deep green and grew vigorously. If the soil extract were previously sterilised by heat, it produced no effect. Moreover the soil used in the preparation of the extract was of importance; with Peas any soil extract answered, but not so with Lupins and Sainfoin. With these plants, to render success certain it was found necessary to use an extract of a soil which had previously grown the same plants. Some experiments were also made in large sealed flasks, to which carbon dioxide was admitted at intervals; in these the results were practically the same as in free air, showing that it was not the combined nitrogen of the air which was absorbed.

It was also found that whilst on the leguminous plants which developed well, either with or without the addition of soil extract, the characteristic tubercles of papilionaceous plants were well marked, on those which did not develop in the sterile soil, and also on plants grown in sterilised soil to which nitrate had been added, and which plants developed at the expense of the added nitrogen, but did not assimilate free nitrogen, there were no tubercles. Hence there is obviously some connection between the production of the tubercles and the assimilation of the free nitrogen. In all cases where free nitrogen is presumably assimilated by the plant, the soil is also enriched in nitrogen, the more so when the plant growth is more vigorous, and this excess of nitrogen in the soil is almost entirely in organic combination.

The general conclusions are that leguminous plants, though they are able to make use of combined nitrogen in similar forms to those the gramineous plants utilise, yet differ from this latter order of plants in being able to use some other form of nitrogen, not that existing in the soil. This second source of nitrogen must be the free nitrogen of the air, which the Leguminosæ utilise through the agency of certain micro-organisms which are in symbiosis with them, and exist in the tubercles of the roots of this order of plants.

The results obtained by Von Wolff at Hohenheim from 1883 onwards are mentioned. Wolff is not inclined to admit that plants assimilate free nitrogen, but thinks that the only remaining hypothesis is that certain plants can appropriate the combined nitrogen of the air, either directly through their leaves or more probably after absorption by the soil. A porous soil probably absorbs far more nitrogenous compounds from the air than an equal superficial area of dilute acid, as used in experiments by Schloessing, Kellner, and Müller. He admits, however, that it is difficult to see why the grasses are unable to benefit by this equally with the legumes.

W. O. Atwater has published three papers on various aspects of the subject in the *American Chemical Journal*. In these papers he gives results of his own experiments and also discusses those of others. He concludes that in many of his experiments with Peas, when the growth was normal, half or more of the total nitrogen of the developed plants was obtained from the air. In what way the nitrogen was acquired the experiments do not show, but Atwater inclines to the idea that the plants themselves directly acquired the atmospheric nitrogen. The conclusion of this second part of the memoir gives some recent experiments and opinions of Boussingault on the subject. He remained strongly of the opinion that plants were unable to assimilate free nitrogen; although, as is here pointed out, some of his experiments in 1858 and 1859 with Lupins might be considered as leading to such a conclusion.

The third part of the memoir gives a summary and general consideration and conclusions. Regarding the evidence relating to other sources than free nitrogen, Lawes and Gilbert have shown that the amount of nitric acid remaining in a soil is much less after the growth of a crop than under corresponding conditions without a crop. Also that nitrification in soils is more active where leguminous crops are grown than where gramineous plants only are present; and that deep-rooted

leguminous plants like *Medicago sativa* or *Mcilolus leucantha* take up more nitric acid from the soil than shallower-rooted leguminous plants like *Trifolium repens*. But the supply of nitric acid in some soils, such as Clover-exhausted land or Bean-exhausted land, is inadequate to account for the nitrogen taken up by other leguminous crops grown on such land. No very definite conclusions could be drawn from the Rothamsted experiments as to the power of the acid sap of roots to take up nitrogenous organic matter from the soil, though it is seen to be not improbable that green-leaved plants can "take up directly, and utilise, bodies rendered soluble within the soil by the action of their acid root sap."—E. K. (in *Nature*).

(To be continued.)



HARDY FRUIT GARDEN.

SELECTIONS OF FRUIT.—*Apples*.—A good selection of dessert varieties, which may be grown either as cordons, espaliers, pyramid, or bush trained, would be obtained by planting Beauty of Bath, Irish Peach, Worcester Pearmain, Kerry Pippin, King of the Pippins, Gravenstein, Cox's Orange Pippin, Margil, Fearn's Pippin, Ross Nonpareil, Braddick's Nonpareil, Adam's Pearmain, Rosemary Russet, Ribston Pippin, Cornish Gilliflower, Court Pendu Plat, Lord Burghley, and Sturmer Pippin. All these are good bearers of first-class quality, and are given nearly in their order of ripening. If another half a dozen are required these may well consist of Cornish Aromatic, Court of Wick, Sam Young, D'Arcy Spice, Wyken Pippin, and Cockle Pippin. A corresponding list of culinary varieties would consist of Keswick Codlin, Lord Suffield, Duchess of Oldenburg, Stirling Castle, Emperor Alexander, Golden Noble, Cellini, Cox's Pomona, Lord Derby, Ecklinville, Bramley's Seedling, Lady Henniker, Lane's Prince Albert, Kentish Fillbasket, Blenheim Pippin, Winter Greening, and Norfolk Stone Pippin; Loddington, Tom Putt, Warner's King, Brabant Bellefleur, Dredge's Fame, and Brownlee's Russet being also desirable culinary varieties. The following is a good selection for orchard planting:—Keswick Codlin, Duchess of Oldenburg, Emperor Alexander, Hoary Morning, Manks Codlin, Kerry Pippin, London Pippin, Lemon Pippin, Reinette de Canada, Lane's Prince Albert, Beauty of Kent, Bramley's Seedling, Blenheim Pippin, Northern Greening, Dumelow's Seedling, Brabant Bellefleur, French Crab, and Tower of Glammis. Alfriston, Annie Elizabeth, Hanwell Souring, Galloway Pippin, and Warner's King are also profitable orchard varieties. Any Apple it is desired should attain a large size ought to be grafted on the Crab stock, but the most productive miniature trees are those on the dwarfing English Paradise or Doucin stock.

Pears.—The best thirty dessert Pears, arranged somewhat in their order of succession, consist of Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Flemish Beauty, British Queen, Beurré Superfin, Beurré Hardy, Louise Bonne of Jersey, Beurré Diel, Doyenné du Comice, Maréchal de Cour, Marie Louise, Pitmaston Duchess, Thompson's, Huyshe's Prince Consort, Hacon's Incomparable, Winter Nelis, Beurré Bachclier, Beurré d'Aremberg, Glou Morceau, Huyshe's Victoria, General Tottleben, Beurré Sterckmanns, Josephine de Malines, Bergamotte Esperen, Easter Beurré, Beurré Rance, Elisa d'Heyst, Olivier de Serres, and Madame Millet. All of these can be grown as espaliers, fan shaped, and cordons against walls, and all with the exception of Jargonelle and Josephine de Malines are suitable for pyramidal and bush training, though the fruit of Glou Morceau and Easter Beurré are seldom of much value from other than wall trees. The natural or Pear stock is the best in all cases where vigorous trees are required, the dwarfing or Quince stock being desirable when smaller quickly fruiting trees are required. The following Pears will do well in orchards on the Pear stock:—Williams' Bon Chrétien, Hesse, Louise Bonne of Jersey, Windsor, Fertility, Beurré Capiaumont, Eyewood, Clapp's Favourite, Marie Louise, Hacon's Incomparable, Beurré Diel, and Jargonelle. The six best stewing Pears are Vicar of Winkfield, Verulam, Catillae, Gilgil, Black Worcester, and Uvedale's St. Germain's.

Apricots.—These will not succeed in all gardens, and require a sunny wall in any case. The best are Early Moorpark, Large Early Moorpark, Roman, Hemskerk, and Shipley's. Apricots are not unfrequently grown as standards, but only in the most favoured districts do they succeed satisfactorily. The most reliable for this purpose are Breda, Turkey, and Brussels.

Cherries.—For wall culture the best six varieties are Early Rivers, Black Tartarian, May Duke, Elton, Late Duke, and Florence. The Morello is the most profitable on cool walls, and this, Black Tartarian, May Duke, Bigarreau, Governor Wood, Elton, Bigarreau Napoleon, and Early Rivers are well adapted for culture either as pyramids in the open garden or as standards in an orchard.

PEACHES AND NECTARINES.—The former under good culture will succeed as well against sunny walls as ever they did, but Nectarines are more fickle, these seldom attaining perfection without the aid of glass. A good selection of the former, arranged somewhat as they ripen, con-

sists of Hale's Early, Alexander, Dr. Hogg, Grosse Mignonne, Royal George, Alexandra Noblesse, Bellegarde, Barrington, Princess of Wales and Sea Eagle. In cold late districts the late varieties seldom ripen properly, but a trial ought to be given the first seven named. Nectarines that sometimes succeed fairly well are Balgowan, Stauwick Elruge, Hunt's Tawny, Albert Victor, Downton, and Elruge.

PLUMS.—For wall culture the most reliable and good in quality are Green Gage, Oullins Golden, Jefferson, Kirke's, Transparent Gage, and Coc's Golden Drop, and principally for culinary purposes—Early Rivers, Morocco, Victoria, Magnum Bonum, Pond's Seedling, and Goliath. Most of those named also succeed well as pyramids or bushes, while a selection for orchard culture should include Early Rivers, Early Orleans, Gisborne's, The Czar, Magnum Bonum, Prince Englebert, Prince of Wales, Victoria, Mitchelson's, Green and Purple Gage, and the Nectarine Plum. Damsons will thrive in almost any position. The Farleigh or Crittenden's Prolife is by far the most productive, but the quality of the common and Shropshire Damsons is superior.

FIGS AND GRAPES.—Neither of these are very generally or so much cultivated in the open as they were, being somewhat uncertain in all but the most highly favoured southern districts. A sunny sheltered position and a firm chalky soil best suits Figs, and if these conditions could be more often accorded there would be fewer failures. The varieties that prove the hardiest and most productive are Brown Turkey, Brown Ischia, and White Marseilles, the Brunswick, though somewhat shy bearing, being also grown extensively. Grapes fail if the wood does not ripen properly, and these therefore ought to be planted against the most sunny walls. Royal Muscadine is the most reliable variety, and with this may be planted the Early Ascot Frontignan.

SMALL FRUITS.—What are considered the best Black Currants are Lee's Prolife, Black Champion, Baldwin's, and Prince of Wales. Of Red Currants the most profitable are Scotch Red, Red Dutch, or Haughton Castle, and White Dutch is the best of the white kinds. Raspberries.—Carter's Prolife, Fastolf, Bee Hive, and Northumberland Fillbasket are all excellent, Semper Fidelis being a good late variety. If a yellow fruited variety is required, the Yellow Antwerp is recommended, and the October Red is the best for autumn bearing. Gooseberries are more numerous, and it is advisable to grow a greater variety of these in order to have a long succession of fruit. The favourite varieties are Early Sulphur, Early White, Large Whitesmith, Yellow Champagne, Ironmonger, Whinlam's Industry, Rifleman, Red Warrington, Rough Red, Crown Bob, Lancashire Lad, and Green Walnut.

MEDLARS, MULBERRIES, NUTS, AND FILBERTS.—The Dutch is much the largest Medlar, but the Nottingham is more productive, and by far the best in point of flavour. The Black Mulberry is the only variety recommended for culture in this country. The Thin-shelled and Dwarf Prolific are the best Walnuts, while the most profitable Filberts and Cob Nuts are the Lambert Filbert, White Filbert, Cosford, and Webb's Prize Cob.

WHEN TO ORDER TREES.—It cannot be too often pointed out how unwise it is to delay ordering till late in the season. Those that give their orders early are certain to get good trees of the varieties they need, but as there is usually a run on the best, and therefore usually the most popular varieties, the stock of these is liable to be exhausted quickly. Those who are wise therefore will decide at once what they will have, and lose no time in transmitting the order to a reliable nurseryman, who then will have no excuse for sending poor trees, or for substituting inferior varieties for those ordered.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—The trees in this structure have been at rest for some time, and the roof lights having been removed the borders with recent rains have been well moistened down to the drainage. The house will have been thoroughly cleansed, the trees untied, pruned, dressed with an approved insecticide, rearranged and tied on the trellis, the border surface dressed, and all in complete order for a start when the time arrives. If, however, the roof lights have not been removed care must be taken not to allow the soil to become too dry at the roots of the trees, as that is sufficient to cause the buds to fall. If the trees are weakly or with too many buds, as they generally are this season, a supply of liquid manure whenever water is necessary will be of great benefit. The surface soil also should be removed down to the roots, not disturbing them, but supplying 2 or 3 inches thickness of good loam, and if the soil be light a fourth of clay marl with a bushel each of steamed bone meal, soot, and wood ashes to every cartload of soil, thoroughly incorporated, making it firm, and giving a good watering. Borders that are rich in humus from heavy dressings of manure or liquid manure may be dressed with freshly slaked lime an inch thick and mixed with the soil as deeply as practicable without disturbing the roots to any great extent, omitting the top-dressing before named. In treating borders it should be pursued on both the inside and outside. Complete the pruning and dressing, cleansing the house, admitting air to the fullest possible extent. The outside border being thoroughly moistened it may be covered with a few inches thickness of leaves with litter to prevent their being blown about.

Second Early-forced House.—The trees with us are leafless, and should be pruned (after untying), dressed, and rearranged on the trellis. This with a thorough cleansing of the house exterminates all insects before they have time to find safe winter quarters. We have some brown scale this year, and shall syringe with a wineglassful of petroleum to three gallons of softsoap solution, 4 ozs. of soap to the gallon,

and repeat it at least twice. In pruning early-forced trees it is not desirable to cut away much wood, nor indeed any kind of trees at the winter pruning, confining it to removing any useless parts that have escaped the knife at thinning after the fruit was gathered, and any long unripened shoots may be cut back to a triple bud, making sure that the centre one is a wood bud, or to a wood bud on well ripened wood. Shoots, however, that are well ripened need not be shortened under any circumstances, except to originate growths for furnishing. Those of from 8 to 12 inches length should not be shortened at all, as they have wood buds at the base and one at the extremity, the others being fruit buds. It is, however, a great mistake to retain much wood, which weakens the trees in flowering, and there is not space to train in the young growths without crowding. In other respects treat the trees, house, and borders as advised for the early house.

Third Succession House.—The trees are shedding their leaves and the buds are not too highly developed. We have a decided objection to large bloom buds on Peach and Nectarine trees, as those are the kinds that usually fall, if any do, and we think over-development as well as dryness at the roots with extreme fluctuations of temperature and hygrometrical conditions are the chief causes of the buds being cast. The roof lights have not been removed, as the wood is rather stronger than usual; such requires more time to mature than weakly or even the moderately vigorous—the best sort to have. The house having been kept rather close by day and thrown open at night, which has browned or hardened the wood, and the roots being kept moist, the buds are as plump as desirable, so that the roof lights will come off forthwith. Where the roof lights are not moveable care must be taken to prevent the soil becoming dry, and air must be admitted to the fullest extent, securing as complete rest as possible. Let no opportunity pass of pushing forward the pruning, dressing the trees, and having all needful work done.

Later Houses.—These may contain midseason or late sorts, in each case having fire heat to assist in spring at setting and in the early stages of growth, or in unfavourable weather during growth. The trees are beginning to cast their leaves, and where the roof lights are moveable, which ours are in all instances, it is advisable to remove them as soon as the foliage is down; but where green leaves hang long it is an indication of unripe wood, and the roof lights must not then be removed for some time longer, the trees being lifted and root-pruned. If this is performed carefully and judiciously it will not prejudice next year's crop, but it must be done whilst the foliage is still upon the trees, keeping the house rather close, the trees syringed, and the house shaded if the weather be bright. Under ordinary circumstances as to weather those precautions are not necessary. It is only when the trees are gross and the wood unripe that the particularly careful treatment is necessary. In the case of young trees it will suffice to take out a trench one-third the distance from the stem the trees cover the trellis and down, so as to cut off all roots to the drainage, leaving the trench open for a fortnight, not allowing the soil in the radius to become so dry as to distress the foliage to a severe degree of flagging, but not giving any so long as the leaves maintain their persistence, and then the trench may be filled firmly. This will check the tendency to a late growth and ripen the wood and buds.

Unheated Houses.—Peaches and Nectarines succeed well enough in some localities against walls under careful and judicious treatment, and in the majority they are more certainly grown under glass, and in some places attempting to grow Peaches and Nectarines out of doors, even in the most favourable aspect, is a waste of space, as such would be highly profitable put to more suitable purpose, as for instance for the choicer Pears and Plums. To afford a succession of Peaches and Nectarines over a lengthened period unheated houses are peculiarly appropriate, for which purpose have Alexander, *Hale's Early, Dr. Hogg, *Stirling Castle, Alexandra Noblesse, Bellegarde, *Barrington, Walburton Admirable, and *Sea Eagle. If more are wanted choose Condor, Crimson Galande, Grosse Mignonne or Belle Beauce, Noblesse, Royal George, Violette Hâtive, and Princess of Wales. Prince of Wales under glass does first rate; very large, highly coloured, and good in quality—indeed, one of the finest, but its constitution is not suitable for outside. Of Nectarines obtain *Lord Napier, Hardwicke Seedling, Rivers' Orange, Milton, *Pine Apple, Newton, Spencer, and *Victoria. Those only requiring a few sorts may select such as are marked with a star. It is, however, much the best policy to have divisions or separate structures for accommodating early, midseason, or late varieties. Early: Alexander, Hale's Early, and Dr. Hogg; Nectarines: Lord Napier and Goldoni. Mid-season: Stirling Castle, Alexandra Noblesse, Bellegarde, and Belle Beauce; Nectarines: Hardwicke and Rivers' Orange. Late: Barrington, Princess of Wales, Walburton Admirable, Sea Eagle, and Gladstone; Nectarines: Pine Apple and Victoria. The structures should have south or south-west aspects. We have one, however, for late on a west aspect which has been very satisfactory. The chief thing with trees in unheated houses is to train the growths rather thinly, so as to insure short-jointed wood; thoroughly solidified growth, to allow unobstructed light, and provide efficient ventilation. Proper attention must of course be given to cleanliness and due supplies of aliment. There is also the important consideration of retarding the blossom in spring as far as practicable. This we find best effected by removing the roof lights as soon as the leaves fall, and allowing them to remain off until the blossoms are swelling and showing colour. It also has a beneficial effect on the trees by the cleansing influence of rain and snow, and is well worth attention if only in securing the thorough moistening of the soil. Such trees can be kept perfectly under control

by occasional lifting and root-pruning, as may be considered expedient. Overluxuriance or a tendency to late growth is overcome by lifting, which should be done after the wood becomes firm, and whilst the foliage is still upon the trees. Intelligently practised lifting and laying the roots near the surface and firm soil is the surest remedy for trees that fail to set and stone full crops of fruit.

KITCHEN GARDEN.

TRENCHING AND DIGGING.—We do not approve of vacant vegetable quarters in winter, but as late Potatoes are dug and Peas or Kidney Beans are cleared away little can be done to refill the ground at this season, and as there is now plenty of time for trenching and digging these important operations should receive attention. Every garden is dug, but trenching is rarely attempted by those eager to work their gardens cheaply, but it is a great mistake to avoid it, as it is one of the most beneficial operations anyone can possibly engage in. The worst soils are improved rapidly by trenching, and the best will become more fertile under this treatment. There is little danger of crops failing in a thoroughly trenched soil, and let the weather or season be wet or dry advantageous results will follow in all cases. Unless actual rock is reached near the surface the soil should be trenched to a depth of 2 feet at least, or 6 inches more if possible. Refuse of a fertile character may be trenched down to these depths with excellent results, and this will afford considerable drainage to the crops. The surface should be left in a rough state, as the frost and wind of winter will soften and sweeten it for early spring seed sowing.

FORCING RHUBARB.—As the Apple crop is not heavy this year there will be early demand for Rhubarb. Too much Rhubarb is grown in some gardens. We often see large quarters from which half the crop is not gathered, and as this takes up ground that might be more profitably filled with other crops, we advise the early forcing of all surplus roots. Until Christmas or a little later Rhubarb is a profitable crop in the market, but in the spring months it is a difficult matter for small growers to make it remunerative. Roots four years old and onwards may be forced, and if well matured they will yield a good crop for cutting in November or December. They are rarely too old to force, and we have sometimes cut huge clumps in two, taken up one half to force and allowed the other to remain for a year or two longer. There are two good ways of forcing Rhubarb—one is to cover it with inverted pots, casks, or boxes, and place a quantity of fermenting material around them in the form of a hotbed. The other way is to lift the roots, place them in a Mushroom house, near a fire or under a warm stage, and in partial darkness. With a bottom heat of 85° or 90°, and a top heat of 70°, with plenty of moisture, the growths will appear in ten days after placing them in heat, and we have cut the produce in twenty-one days after treating it in this way in December. For private use two or three roots taken in every fortnight will give a constant supply.

AUTUMN-SOWN ONIONS.—These have grown well this autumn, but owing to the absence of sunshine they are somewhat tender, and if early or severe frost occurs they may suffer considerably. This may, however, be partially averted by shaking a little sand or finely sifted ashes along each side of the rows, and immediately afterwards put the foot on each side of the plants and tread the soil down all along and close to them as firmly as it can be pressed. The soil will not then retain superfluous moisture at the roots, the plants will become more robust and hardy, and they will pass through the winter without shrivelling at the points or withering at the roots, and when spring comes few will attempt to run to seed prematurely, an evil from which many suffer.

SPRING CABBAGES.—The same remarks and the same practice apply to these. When the plants are loose in the ground the wind upsets them, they form large flabby leaves, and suffer much by frost; but when the soil is very firm around them they grow robustly. Wind does not disturb them, and when the spring comes they are ready to begin forming heads and will be ready for cutting some weeks before the large-leaved plants, although these may appear the largest. Blanks should be made good, then draw a quantity of soil to the stems with a drag hoe, and tread round every plant afterwards. This is beneficial everywhere, but more particularly on light soils.

APPLYING LIME.—We never like to apply lime to the soil immediately before planting or sowing. In a fresh state it is apt to produce rust on roots, and scab in the Potato has often been traced to this cause, but if the lime is applied some months before the planting season the results will be beneficial. In carrying out the digging or trenching above suggested the lime should be introduced, especially to the soil near the surface, as it is there it is most wanted, and if applied there at present it will be washed through the whole by the spring. We apply it on the quarters in one or two barrowloads here and there, a quantity of soil is thrown over it, when it swells and hursts, and is dug in soon afterwards.

VEGETABLE REFUSE.—As fallen leaves are now plentiful and decayed vegetables are to be found in all gardens the present is the best of all times to form a heap of vegetable refuse. Everything in this form, as well as any old soil of a fertile description, helps to make a heap of manure. If placed together and mixed in a mound 3 feet or 4 feet in depth it will be well decayed by March, and in fine condition for digging in with Potatoes or any other crop.

WINTER TURNIPS.—Generally yellow Turnips or the Chirk Castle type are usually grown for winter, but in some cases these are not relished so much as the white ones, and where it is desired to keep the latter as late as possible the soil should now be drawn up over the roots

with a drag hoe. They are often somewhat tender, especially if of considerable size. When once touched by frost they will not keep for any length of time, and if protected by the soil before being injured in any way they will remain good throughout the greater part of the winter. We prefer this plan to lifting them, as when stored they are apt to shrivel, and they certainly become deficient in flavour.

LETTUCE AND ENDIVE.—Those nearly fully grown should be lifted with good balls of soil attached to the roots and placed close together in cool dry frames. A mixture of leaf soil and sand or any light material is best to apply about the roots, as they will not grow further, but only require to be kept fresh.

THE BEE-KEEPER

NOTES ON BEES.

DRONES AND DRONE COMB.

WHILE the important uses of drones cannot be over-estimated, we must not overlook the fact that the profit of hives may be rendered nil by having an excess of them. When a swarm is at first placed into a hive (unless in cases where the queen is unable to perform her natural duties) the bees at first, and according to the cluster, as a rule build worker comb. If the whole hive does not exceed in space the cluster of bees very little drone comb will be built, but where the hive is larger than the cluster immediately as the bees increase the remaining space is filled with drone comb, and often so when a comparatively young queen is in the hive.

If the queen regnant is removed and a newly fertilised queen introduced worker comb will be built, which is a proof that young queens are the best preventive to swarming, and that space will not prevent it, while it shows plainly that an excess of drone comb incites the bees to raise royal cells and to swarm.

While I readily admit the usefulness of drones in more ways than one, I cannot overlook the fact that beyond a certain limit they are absolutely hurtful, because the excessive laying of drone eggs exhausts the powers of the queen. Drones consume more food than workers, and beyond being mere heat-producers perform no labour. Seeing, then, that an excess of drones is an error, which can in no way compensate for a diminution of the workers, but is on the other hand a decided loss, and is no stretch of the imagination to say that where a twelfth part of the combs are drone it is a diminution of the ingathering of honey of at least 2 lbs. daily in ordinary honey weather. In 1863 I inadvertently left a frame of drone comb in several hives, the result being that very little honey was gathered from these hives, while a large surplus was taken from those adjoining. When drone comb is built and bred in towards the close of the season there will be no perceptible difference of honey gathering, but in all cases of early drone-rearing before the hive is full of bees there will be a decided loss to the bee-keeper. For long I have made it a rule to overhaul all my hives in autumn, replacing all drone comb with that of worker bees, as well as taking care that swarms are never allowed to build an excess of drone comb by filling unoccupied space with either combs or foundation in full sheets; but even with full-sized sheets bees sometimes build drone comb, but are more apt to do so with some makes than with others. I prefer the natural based cell with extra high side walls.

Hives that engender damp and mould throughout the winter destroy the combs; in all such cases the renewed combs are drone, resulting in an excess of drone comb in cases where the bee-keeper may have in the previous autumn guarded against it. Drone combs are regarded by some writers to be store combs built purposely by the bees for the storing of honey. A greater error than this could not be made. The first combs built by a swarm are always worker and at the crown of the hive where the honey is always stored, the drone comb mostly being built at the bottom of the hive, or lower edges of the comb; besides, in strong hives

with young queens it is seldom we have drone-combed supers and the removing of one or more filled supers, next to having a young queen, is the best preventive of swarming. When that cannot be effected, and other conditions are favourable to it, the removal of laden side combs will have a similar effect.

But the bee-keeper will do well to become impressed with the utility and non-utility of drones, as also with the causes of swarming and the means of preventing it, for without such knowledge bee-keeping will, instead of pleasure and profit, be one of disappointment and loss.

STIMULATIVE FEEDING.

It is a well known fact that I have always been opposed to slow feeding, as it is termed. A better illustration in support of my system could not be given than what occurred in my own apiary lately. Some of my nuclei at the end of August and early in September were fed a little simply to keep them alive until they were supplied with combs from hives having old queens. Although these nuclei were regularly, but sparingly, fed during the above-mentioned period, very few of them reared any brood. No sooner were they supplied with combs containing large stores so late as October, than without a single exception they all commenced breeding extensively, and to work in such a manner as to convince the greatest sceptic that stimulative or slow feeding is an error in bee husbandry.

PREPARATIONS FOR THE FUTURE.

The dark days will soon be upon us. Already we hear of preparations being made for Christmas, and no sooner have the leaves fallen than the buds in some cases appear swelling, as if spring was really at hand, although Dahlias in many cases are still flowering, and Primulas are also flowering freely, autumn and spring joining hands as it were. We do not know what is before us, whether the winter will be a severe one or not, but there is one thing certain, it will be as fleeting as usual, and although but beginning will soon pass away, but not without its long nights, a season welcome to many for the opportunity afforded of intellectual culture. I trust, therefore, that after what has been hinted at in the management of bees, all necessary requirements for the apiary will be prepared during the long evenings, so that nothing may be omitted that will ensure a prosperous apiary in 1890.—LANARKSHIRE BEE-KEEPER.



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (C. T.).—Mr. J. Douglas's book on Hardy Florists' Flowers, and Mr. B. S. Williams' work on Choice Stove and Greenhouse Plants, will contain the information you require. (A. R.).—The book you name is one of the best of its kind.

Chrysanthemum Elaine and Mrs. Marsham (*Chrysanthemum*).—The National Society's catalogue gives Mrs. Marsham as synonymous with Elaine, and therefore it would not be admissible in a stand for distinct varieties.

Transplanting Box (*W. S., Berks*).—Box may be taken up and fresh edgings made now, or at any time when the weather is mild and the soil in free working condition. We have formed Box edgings with equal success in November and March. More, depends, however, on the way in which the work is done than on any particular time between September and April for doing it.

Training Pear Trees (*C. L. D.*).—If the Pitmaston Duchess Pear trees are on the Quince stock we should advise their being trained upright as No. 1, or five-branched vertical cordons, and if on the Pear stock they would preferably be trained fan-shaped, or as No. 2. That is not a good mode of training Pears; they are best when on the free stock trained horizontally, which you may readily do by taking the lowest pair of shoots to the right and left respectively of the stem, and to the lowest wire, the next pair to the wire above, and so on, the leader being cut back so as to be a few inches lower than where you wish to originate the next pair of shoots with their leader. This will not give so good a tree as if it had been treated with the object of horizontal training, but you will gain a year by following the plan indicated. The side shoots should not be shortened, but trained in their full length, it being only necessary to cut back the leader with a view to originate growth as desired.

Pear Trees Producing Cracked Fruits (*Idem*).—The only remedy is to root out the trees and plant fresh trees of varieties that are not likely to have the fruits affected in the way you describe, to which some varieties in certain localities are peculiarly liable, usually from the climate being too cold and wet. Select those known to succeed in the neighbourhood. The only thing that affords any mitigation of the attack is to lift the trees and replant them in entirely new soil, preferably the top spit of an old pasture. All the attacked fruit should be destroyed by fire, the leaves also being collected and burnt.

Vines Infested with Thrips (*H. T. H.*).—The leaves sent are badly infested with thrips. Coating the hot water pipes with sulphur in thin solution with milk will not, as far as we are aware, destroy them, but it is good against red spider and mildew. There is danger, too, in using the sulphur for too highly heated surfaces, as the fumes injure the skin of the Grapes. For the thrips no remedy is so safe as fumigation with tobacco, which should be done on two or three consecutive evenings when the weather is calm, and as this will only destroy the insect then present, the fumigation should be repeated in a week or ten days. The fumigation will not injure the Grapes, and the smell will pass off in a few days.

Grape having Muscat Flavour for Growing with Plants (*W. B.*).—No Grape has the Muscat flavour so highly developed when grown in an ordinary greenhouse as yours seems to be as Black Muscat (Muscat Hamburg). It, however, is subject under such conditions to have a large per-centage of stoneless berries, which to some extent may be remedied by fertilisation with Black Hamburg pollen. It is a capital cropper, and otherwise does well in a moderately heated house. Madresfield Court is a very much more satisfactory Grape, and though not having the full Muscat flavour as in Black Muscat, has a decided Muscat flavour, and it sets and swells freely, having fine bunches and berries. Of the two we should select Madresfield Court, for though liable to crack in some circumstances, we know it to be grown very finely indeed in a large house or conservatory that is always full of plants. Gros Colman requires a long season of growth, and consequently more heat than you would be able to command, and it has not a trace of Muscat flavour.

Apple Lady Henniker (*J. R. O.*).—In the "Fruit Manual" the following description and history are given:—"Fruit, very large, 3½ inches wide, and 3 inches high; roundish, narrowing a little towards the apex, and with blunt angles on the sides, which terminate in prominent ridges round the eye. Skin, yellow on the shaded side, with a faint blush of red, which is covered with broken streaks of crimson, on the side next the sun. Eye, large and open, with short segments, and set in a very deep and angular basin. Stamens, median; tube, conical or funnel-shaped. Stalk, very short, set in a very deep, wide, russet cavity. Flesh, very tender in the grain, well flavoured, and with a pleasant perfume. Cells, obovate; abaxile. A first-rate Apple, chiefly valuable as a cooking variety, but useful also in the dessert. October to February. This Apple was raised at Thornham Hall, near Eye, in Suffolk, and the account of it, furnished in the years 1840 and 1850 the late Lord Henniker had great quantities of cider made to give away in the summer months. Several bushels of Apple pips were sown in beds, from which the most promising seedlings were selected and planted; these were reduced every few years. The last thinning was about seven years ago, when thirty-three trees were cut out. The tree in question was always the favourite, and it has been carefully preserved. It is largely used here when large and handsome dishes of mixed fruit are required for the dinner table. Its appearance by lamp-light is most telling. The tree is very healthy, and a great bearer."

Ink for Zinc Labels (*W. S.*).—The proper ink for writing on zinc is nitro-muriate of platinum, which produces a jet-black indelible stain. This preparation is easily made, and at very little cost. Procure an ounce stoppered phial, into which have two pennyworth, or half an ounce, of nitro-muriatic acid (composed of two parts muriatic to one of nitric), which may be obtained of any chemist. Next obtain from the gunsmith an old platinum touch-hole, which may be had for a few pence; then putting the latter in the acid and leaving out the stopper, set the

phial in the sun or else upon hot sand until the acid has assumed a deep, rich brown tint, or that the metal has ceased to give off bubbles of gas from the acid becoming a saturated solution. A few drops of this should now be added to a little water and tried with a quill pen, adding drop by drop until a sufficient blackness is produced. When using great care must be taken to wash the writing thoroughly in plenty of water immediately it has blackened, and then it should be wiped quite dry and varnished as soon afterwards as possible. 2, Take one part verdigris, one part sal-ammoniac, half part lampblack, and ten parts of water; mix well, and keep in a bottle with glass stopper; shake the ink before using it. It will keep any length of time. Write it on the label with a steel pen not too fine-pointed. It dries in the course of a minute or two, and will endure for many years. Or, put into two-pennyworth of common writing ink two pieces of sulphate of copper the size of a hazel nut; let it dissolve, and write on the zinc with a quill pen.

Manures for a Garden (*R. A. C.*).—An excellent manure for all description of garden and field crops is formed by an admixture of the cow, pig, and horse manure and leaves. It will grow good crops of every kind. Not that we object to artificials, but yours being a light porous soil will have its staple added to in a manner that must constitute a permanent and ever increasing improvement as a rooting area, and correspondingly enhance its value for cultural purposes. Perhaps a dressing of lime would be most suitable in your case as a deterrent of club, but as that falls through on account of the expense, some mitigation of the effects may result from a judicious employment of artificials. Nitrate of soda is good, of which 1½ cwt. is sufficient for an acre. Nitrate of potash is also good, but the best form of potash is, perhaps, the muriate, which may be applied at a similar rate as the nitrate of soda. Superphosphate of lime is first-rate, almost indispensable to full crops of the Brassica family, 3 cwt. being a suitable dressing. Those well incorporated may be applied as a surface dressing at the time of putting in the crops, pointing it in lightly, or if drills are made as in sowing, that with the necessary raking will be all that is required. The quantity named is a full amount for one acre. For the pasture we should omit the nitrate of potash (saltpetre) and increase the quantity of steamed bonemeal proportionately, so that the mixture would be three-quarters of a cwt. steamed bonemeal, three-quarters of a cwt. nitrate of soda, and 1½ cwt. mineral superphosphate. February is a good time to apply it. Superphosphate of lime is bones dissolved with sulphuric acid. Mineral superphosphate is dissolved fossilised bones—i.e., coprolites.

Culture of Pleroma elegans (*M. O.*).—This is an evergreen shrub, with purple flowers produced in June. Repot in spring, and again in June for young plants, training in the pyramidal form, and stopping the growths up to July, so as to induce a compact habit. Established plants must be cut-in closely after flowering, and kept rather dry and cool for about three weeks, and then rather close and moist, being careful not to overwater; and when the young shoots are an inch long turn the plant out of the pot, remove most of the old soil without disrooting much, and repot in the same size of pot. Keep it rather close, moist, and shaded for a few days, then admit air moderately, and keep in a light airy position over the winter. In April shift it into a pot 2 to 4 inches larger in diameter, and the plant will be the better for placing in a Peach house started to ripen the fruit in June, the moisture from syringing and the well-ventilated atmosphere securing a stiff vigorous growth. Failing this convenience keep it in the warmest part of the house, but well ventilated, and syringed twice daily. In July place it in a cool airy house, shielded from midday sun. In September return it to the greenhouse, assigning it a light airy position. The shoots if growing irregularly may be stopped, but not after June, and they should be tied in autumn after the manner of Azaleas. If the plants are young they may be potted in June, in addition to spring potting; the plants will therefore have a season to grow in and another to flower, so that two sets of plants will need to be grown to have flowers every year. Sandy fibrous peat four parts, very fibrous sandy loam one part, and one part in equal proportions of pieces of charcoal, broken pots, and silver sand, well mixed, and used rather rough. The drainage must be good. Cuttings of half-ripened shoots, short and stubby, in sand over sandy peat, under a bellglass placed in a close frame, and gentle bottom heat, tilting the glass on one side at night to prevent damping.

Impatiens Sultani (*R., Surrey*).—The note to which you refer is probably the following, which appeared a few years ago:—Amongst the numerous conservatory flowering plants *Impatiens Sultani* ranks in my opinion as one of the best. With us it is exceptionally fine at the present time, flowering profusely. For cutting and table decoration I must admit we have better plants, but for the conservatory it is most valuable, especially at this time of year. It is generally known it can be had in flower all the year round with a succession of plants; but the time it comes in most useful to us is in September and October, and I think in most establishments it will be welcomed then, as in October flowering plants are very scarce. My mode of having plants in bloom at the above-mentioned time is to insert cuttings about the middle of May. They will strike easily in any ordinary potting soil finely sifted, with a good sprinkling of sand. Place them in a bottom heat of 80°; shade from sun. When struck transfer them into 60-size pots. The soil that I find to suit them best is equal parts of loam and leaf soil, with a little sand and bone dust added. Place them in a good steady moist heat till the plants root into the new soil, and then gradually harden them in a frame. Examine the plants at intervals to see if they want potting, as it is a great mistake to let the pots get too full of roots. The final shift

is into 32-size, or 6-inch pots, the same compost as before. Place the plants as low down in the pot as possible, so as to leave room for a top-dressing a little later on, the compost for top-dressing to consist of a mixture of leaf mould and spent Mushroom dung, with a little sand and bones added; this last addition will greatly benefit them. Never stop the points of the plants; let them grow in their own natural way, as I think it is far the best. About the beginning of September take them out of the frame into a conservatory. Stake the plants out as they require it, as when placed in conservatory, especially in dark places, they get drawn. Keep the plants in as light a place as possible, as these flowers come a much better colour. The brilliant display they make till the Chrysanthemums are brought in will well repay for the trouble bestowed on them.

Vines Unsatisfactory (M. S.).—The Vines will need thorough renovation of the border so as to rejuvenate them. From the crops of Grapes being a "long way from satisfactory," and the bunches "shanking badly," the roots are in a very unfavourable rooting medium, and no wonder, as pigs that have died on the farm are buried in it, and night soil has been put upon it. Night soil is poisonous to Vines when applied so recklessly. Animal matter must be decomposed and pulverised with lime and soil, and night soil mixed with wood ashes, to become safe fertilisers, they then form a valuable manure. In the absence of any roots near the surface it would be of no use applying rape cake or other manure, and it would be sheer waste to do so. New roots are wanted, and until they are produced the Vines will never yield good Grapes. The proper way to proceed would be to remove the soil down to the roots, and if the drainage be good it would only be necessary to take the old soil from amongst the roots and lay them in fresh material nearer the surface. As the Vines have only an outside border care will be needed so as not to injure the roots. Indeed all should be preserved as far as practicable, and they should be kept as much as possible from the atmosphere. If the drainage be bad it ought to be rectified, which may necessitate the lifting of the Vines and remaking the border. If not in very bad condition it would perhaps be sufficient to take part of the old soil away, bring up some of the roots, and add new soil as you propose. In no case should the uppermost roots be deeper than 4 inches, mulching with the same thickness of short but not soapy manure. If the leaves are not off the Vines it would be advantageous to do the work now. Failing any attempt at lifting, a dressing of lime a couple of inches thick may be given, and mixed with the soil as deeply as can be done without disturbing the roots, taking advantage of any roots lying near the surface or proceeding from the collar to raise them and lay them in the fresh soil from 4 to 6 inches deep. If you could pick out the soil for a yard or more around each Vine and quite up to the stem, replacing it with fresh material, fresh roots would be produced that would permeate the soil, changed by the lime into a more suitable and abundant source of food. Encourage fresh growth on the Vines another season, but do not crowd the foliage, a good spread of foliage exposed to light being a good preventive of shanking.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (M. T. S.).—1, Claygate Pearmain; 2, Fearn's Pippin; 3, Cox's Orange Pippin; 4, Golden Spire; 5, Kerry Pippin. (R. O.).—1, Apple, Lady Henniker; see reply on preceding page; 2, Pear, Pit-maston Duchess; 3, Pear, Marie Louise. (S. R. T.).—The Pears are—1, Durondeau; 2, Beurre Bosc; 3, Catillac; 4, Doyenné du Comice. Several packages of fruit which arrived late are reserved for examination, and the names will appear in the next issue.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W.).—1, Yes, it is *Anemone japonica alba*; 2, A seedling variety of the *Rhododendron javanicum* type, but inferior to many of those already in commerce; 3, *Dahlia glabrata*. (Orchid).—It is *Oncidium Forbesi*. (J. II.).—Owing to the specimens being so much withered we have failed to identify them. (L.).—It is *Bulbophyllum umbellatum* undoubtedly, and was figured in the "Botanical Magazine," t. 4267; and in the "Botanical Register," vol. xxxi, t. 44; also in this Journal last week. It is sometimes seen under the incorrect name you give.

TRADE CATALOGUES RECEIVED.

Dicksons, Limited, Chester.—*Catalogue of Forest and Ornamental Trees and Fruits.*

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Catalogues of Fruit Trees and Forest Trees.*

Harkness & Sons, Bedale, Yorkshire.—*Catalogues of Roses and Hardy Plants.*

Kelway & Son, Langport, Somerset.—*Catalogue of Gladioli.*

Fisher, Son & Sibray, Handsworth, Sheffield.—*Catalogue of Fruit, Forest and Ornamental Trees.*

COVENT GARDEN MARKET.—OCTOBER 30TH.

MARKET unchanged.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve..	2	0 to 7	Oranges, per 100	4	0 to 9
" Nova Scotia and			Peaches, dozen	2	0
" Canada, per barrel	15	0	Plums, $\frac{1}{2}$ sieve	3	0
Cherries, $\frac{1}{2}$ sieve	0	0	Red Currants, per $\frac{1}{2}$ sieve	0	0
Grapes, per lb.	0	6	Black "	0	0
Lemons, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Mushrooms, punnet	1	6
Beans, Kidney, per lb.	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bushel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches	2	0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	6	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capicums, per 100	0	0	" Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Cauliflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	0	Scorzonera, bundle	1	6
Colicworts, doz. bunches	2	0	Shallots, per lb.	0	3
Cucumbers, each	0	3	Spinach, bushel	1	0
Endive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Leeks, bunch	0	2			

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms	3	0 to 6	Marguerites, 12 bunches	2	0 to 6
Asters, per bunch, French	0	0	Mignonne, 12 bunches	2	0
" dozen, English	4	0	Myosotis or Forgetmenots		
Bouvardias, bunch	0	6	doz. bunches	1	6
Camellias, dozen blooms	2	0	Pansies, dozen bunches	0	0
Carnations, 12 blooms	1	0	Pelargoniums, 12 trusses	1	0
Chrysanthemums, dozen			" scarlet, 12 bunches	4	0
blooms	1	0	Pinks (various) 12 bunches	0	0
Chrysanthemums, dozen			Poppies, various, 12 bunches	0	0
bunches	2	0	Roses (indoor), dozen	0	6
Clove Carnations, 12 bunches	0	0	" Mixed, doz. bunches	3	0
Cornflower, doz. bunches	2	0	" Red, dozen bunches	6	0
Dahlias, dozen bunches	2	0	" 12 blooms	0	9
Encharis, dozen	3	0	" Tea, white, dozen	1	0
Gardenias, 12 blooms	3	0	" Yellow	2	0
Gladioli, per bunch	0	6	" French, per bunch	2	0
Gladioli, bunchleyensis,			Spiraea, dozen bunches	0	0
dozen sprays	1	0	Stephanotis, doz. sprays	4	0
Lapageria, 12 blooms	1	0	Sweet Peas, doz. bunches	0	0
Lavender, dozen bunches	0	0	Sweet Sulan,	0	0
Lilium anatum, 12 blms	0	0	Tuberose, 12 blooms	0	8
Lilium longiflorum, 12			Violets, dozen bunches	1	0
blooms	3	0	" French, per bunch	1	6
Maidenhair Fern, doz.			" Parme, per bunch	3	0
bunches	4	0	White Lilac, Fr., per bunch	5	0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6	0 to 12	Ficus elastica, each	1	6 to 7
Arum Lilies, per dozen	9	0	Foliage plants, var., each	2	0
Arbor vitae (golden) dozen	6	0	Fuchsia, per dozen	3	0
Asters, 12 pots	3	0	Geraniums, Ivy, doz.	0	0
Begonias, various, per doz.	4	0	Hydrangea, per dozen	9	0
Balsams, per dozen	0	0	Lobelia, per dozen	0	0
Caladiums, per doz.	0	0	Marguerite Daisy, dozen	6	0
Calceolarias, per dozen	0	0	Mignonne, per dozen	0	0
Christmas hosi	0	0	Musk, per dozen	0	0
Chrysanthemums, dozen	6	0	Myrtles, dozen	6	0
Cockscombs, per dozen	0	0	Nasturtiums, per dozen	0	0
Dracena terminalis, doz.	24	0	Palms, in var., each	2	6
Dracena viridis, doz.	12	0	Pelargoniums, scarlet, 12	4	0
Erica, various, dozen	12	0	Rhodanthé, per dozen	0	0
Enonymus, var., dozen	6	0	Saxifraga pyramidalis,		
Evergreens, in var., dozen	6	0	per dozen	0	0
Ferns, in variety, dozen	4	0	Solanums, per dozen	6	0



THE FLOCK IN WINTER.

UPON the principle that a farm should be self-supporting and generally independent of help from without, a selection of the best ewe lambs is made every year for addition to the ewe flock. This selection is made when they are withdrawn from the ewes in June. They are kept apart from other sheep, and have the best grazing, with a few crushed oats to promote quick growth and fairly high condition; they are then ready for the tup at the age of from seven to eight months, the tups being turned in with them three or four weeks later than they are to the older ewes. Forward hoggets will average about a lamb apiece; but if they have not had special

care, and are at all low in condition, the average falls by about a third. Results show that this breeding from such young animals is in every way desirable. We have heard fears expressed that it would stunt the growth and prevent the full development of the ewes, but we can confidently say it does not do so. We have now a half-bred flock of full-mouthed ewes, which we bred and took a lamb from the first year, and they are certainly all fine sound animals. Half-breds and Black-faced Suffolks crossed with Hampshire Down tups answer well for this purpose, but we have also been fairly successful with pure-bred Southdowns.

It is not too late now for a trial of a certain number of ewe lambs should any of our readers feel disposed to test what to them may be a novelty; but without early selection and the special care we have indicated a full measure of success must not be expected. We have known more than one attempt at breeding from ewe lambs fail for want of a little care, and those who thus fail generally condemn the plan outright, upon the assumption that where they have failed success is an impossibility. Now a four-shear or full-mouthed ewe is considered old, and many breeders discard them at once from the breeding flock. If they are home bred, are sound and healthy, and have a good record in the lambing fold we usually take another lamb from them. At best, however, the life of a ewe is a short one, and it is most desirable to render it more profitable by breeding as early as possible. At the outset a flock has to be got together by purchase; afterwards all ewes should certainly be home-bred, and the tups procured from another flock, a little extra outlay upon tups always being a sound investment.

Whether breeding ewes are hoggets or older sheep, all must be kept from root^s before lambing, as we explained last week. Thousand-headed Kale is plentiful enough this year, and with a change to grass it may form the chief food of the ewes till lambing. It is well to have plenty of dry food close at hand in December and January in readiness for snow. So many estates now have other farms in hand beside the home farm, that reliance is often placed upon off-hand farms for a supply of fodder, and the means for obtaining a speedy and prompt supply should always be forthcoming. There must be no falling off in the condition of a pregnant ewe; it has the foetus to nourish, and when the lamb falls if we would have a full supply of milk the ewe must have plenty of sustenance. We recommend a few Mangolds on the near approach of lambing as a wholesome addition to the dietary, and some crushed Oats mixed with bran and chaff should be given regularly in the troughs. The plentiful secretion of milk is natural to a healthy well nourished ewe, but the ewe should be kept in fair condition all the year round. This is a point of much importance, and there can be no greater mistake than to keep lambs with ewes late into July. We have seen ewes taken from the lambs in wretched plight, just so many "bags of bones," and we fail to see how they are to be brought into condition and breed fine lambs in the following season. No doubt it is owing to such mismanagement, such a system of extremes, that there are so many ewes with little or no milk for the lambs; that they also often have not strength to bring forth the lambs; that they die in labour or suffer from one or other of the ailments peculiar to the lambing season. There is no such thing as luck in connection with the management of a ewe flock; cause and effect tell in this as in all other things, and it is our aim to explain the cause of success or failure, upon the principle that prevention is better than cure. In point of fact cure is not always a possibility, and the cause of debility, or worse, is but too often so remote that it is impossible to trace it. To do so is nevertheless always desirable in view of avoiding such mismanagement in the future.

(To be continued.)

WORK ON THE HOME FARM.

The very heavy rainfall has saturated the land, and Wheat sowing is out of the question for the present. While the weather continued

fine, and the land was dry and firm, the temptation to get the roots off the land was so great that many farmers allowed the Wheat sowing to be held in abeyance for a while, and now they will have to wait a bit before the soil will be dry enough to be worked. Under such weather conditions the advantage of drainage and mechanical division is seen in the short time required before drills and harrows can be at work again. We know some farmers who have finished sowing winter corn. There are others who have only just begun ploughing for it, and it will always be so. The prudent man will lose an hour after harvest, but will turn the brief spell of fine weather remaining to account for the most pressing autumn work. When once the weather becomes broken now it may continue so for an indefinite period of time, and late sown Wheat points to a backward harvest. Very much Wheat is sown after Clover, and where the second growth of Clover has been folded with sheep the plan is a good one. Care must be taken not to plough too deeply, and upon the principle that for Wheat a firm seed bed is indispensable it is good practice to use a Cambridge roll once or twice after the drill. Wheat so often loses plant in spring from looseness of soil that all that is possible should be done now to prevent it. After all there is nothing in Wheat culture that commends itself more strongly to our notice and approval at this season of the year than a field sown in September, that is now a full strong plant thoroughly established in the soil. We have no fear of injury from its becoming winter proud—that can always be corrected, and it is far better to have the plant well established now than for it to be hardly visible till the end of the year. As to the sorts of Wheat, we do not hesitate to sow White and Red in autumn, provided the land is sound. Certainly we have not found Champion White Wheat at all delicate, and it always commands a brisk sale at the highest market price if its condition is faultless. Perhaps this Wheat and a good selection of Square Head are about the best for general use.

BUTTER AND GHEE.

In your article "Midsummer Butter," in the *Journal of Horticulture* for the 4th July last, you say that the best butter is made after "haysel," but which, owing to glut, only fetches half price. Then, again, "if such would-be leaders of the farmer would show him how to preserve his butter so as to hold it in reserve till winter that would indeed be helping him." Why don't you do with your butter as we do out here, make "ghee" of it—that is, clarified or "gan" butter? In this country we never use dripping or lard for cooking, only ghee. Cannot you introduce ghee for cooking purposes into England? Really good and well-made ghee is delicious both in taste and fragrance—as nice as Everton toffee. Why not make midsummer butter into ghee, and send it to such large seaport towns as Calcutta, Bombay, Madras, and Kurrachee or Colombo, where it will always fetch good prices? Properly well-made ghee will keep for years. It is very difficult to get good ghee in large towns in India, owing to extensive adulteration. Ghee making was tried in Australia, but I do not know with what result.—A. BANON, *Kooloo-Kangra-Punjaub*.

OUR LETTER BOX.

Bromus giganteus (R. W. P.).—This forage plant will not usually produce like Italian Rye Grass when the imported seed is sown in the autumn and early spring months; and as summer forage we prefer Giant Sainfoin or Lucerne, both for quantity and feeding value, the latter especially when a quick succession is required as green fodder for dairy cows. There is, however, always the question of soil to be considered, and we therefore recommend a trial of these four sorts to ascertain which is the best.

METEOROLOGICAL OBSERVATIONS.

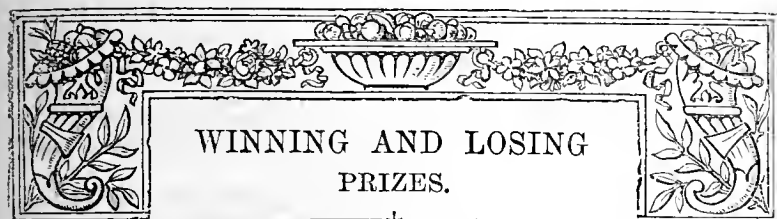
CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1889. October.		Barom- eter at 3 ³⁰ and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In sun.		On grass
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	20	29.214	48.7	48.0	S.	49.4	55.3	47.2	81.9	41.8	0.184
Monday	21	29.357	44.3	47.4	N.	48.9	55.0	42.8	75.3	36.2	0.184
Tuesday	22	29.405	48.4	48.0	N. E.	48.2	54.2	43.3	64.8	26.3	0.051
Wednesday ..	23	29.626	47.1	46.3	N.	43.2	52.4	44.5	62.9	38.7	0.079
Thursday	24	29.022	47.2	46.2	N. N. W.	48.7	51.1	45.9	62.4	41.2	—
Friday	15	29.212	42.1	41.9	N.	47.9	53.3	39.9	59.9	32.8	—
Saturday	26	29.172	47.0	41.1	N. E.	47.3	52.2	42.4	74.3	37.9	0.422
		29.714	47.0	46.0		48.4	53.1	43.7	72.9	38.3	0.920

REMARKS.

20th.—Heavy rain till 9 A.M.; wet morning, and showery afternoon and evening.
21st.—Dull early, wet morning, a little sun at midday, then damp and showery again.
22nd.—Dull and drizzly till 10 A.M., and overcast all day.
23rd.—Overcast all day, with occasional spots of rain in the afternoon.
24th.—Rain in small hours; cloudy morning; fine afternoon and evening.
25th.—Bright all day, spots of rain in the evening.
26th.—Fine, and frequently bright.
A damp and rainy week; temperature about the average, with little range.—
G. J. SIMONS



WINNING AND LOSING PRIZES.

DURING the next three weeks more prizes will be won at exhibitions in various parts of the kingdom than have been awarded in a similar period of time since last November. That fact denotes earnestness of purpose on the part of cultivators of Chrysanthemums and other plants, also fruit, which can be presented in the best condition at this season of the year. The crowds of spectators who inspect, admire, and criticise the exhibits also afford conclusive evidence of the popularity of autumn shows of the nature indicated, and these no doubt give a great impetus to higher cultivation, as well as gain new adherents to a pursuit that is worthy of being engaged in by the greatest possible number of persons of various grades in the community.

Than the cultivation of plants, fruit, and vegetables, according to the means and preferences of individuals, with the tasteful association of flowers for room adornment, we cannot imagine any occupation more deserving of encouragement, and there is no other way in which encouragement can be so effectually given as in offering rewards for the best examples of production. For these the most skilful and earnest strive, while others are stimulated to higher endeavour in the discharge of their duties as gardeners, or in the exercise of a delightful occupation as amateurs. The great increase in November exhibitions, and their markedly improved character, show what can be accomplished by the co-operation of both those classes—those who work in gardens for the means of livelihood, and those who devote their time to the organisation and management of societies and shows as a labour of love. The success of many gatherings, such as those under notice, is largely due to the willing workers last mentioned, and credit should be ungrudgingly accorded them for their valuable aid and disinterested efforts.

Passing to the growers, these must not, cannot be overlooked, for not only is the work of those who win prizes deserving of public recognition, but those who try to win and fail are entitled to be remembered as important contributors to the aggregate success of our exhibitions, for if only prize stands and collections were included, the displays would, of necessity, be seriously reduced in extent, while deprived of the interest that attaches to diversity and of the instructiveness that is found in a comparison of the relatively good with the relatively inferior. There is no fear, however, of all being prizewinners, especially where there is a reasonable gradation in the value of the awards provided. A sensational first prize, then a sudden fall to almost insignificant amounts, can scarcely be expected to incite competition. The plan may answer in an isolated case, and for a year or two, but it is extremely improbable that it can long find favour with the majority of cultivators. A nearer approach to equalisation in amounts would in all likelihood meet with more general approval, and in most classes the plan would be equitable, for in many of them the difference in the amounts is out of all proportion with that of the exhibits. For instance, if a sum of say £14 were apportioned in four prizes of £5, £4, £3, £2, it is practically certain that a better response would be made than if £15 were divided into three prizes of £10, £3, and £2. But under any circumstances more prizes will be lost than won during the present campaign, hence disappointment must preponderate over jubilation among exhibitors.

Some will bear their misfortune bravely and resolve to repair

it; others will feel bound to express their chagrin, and in a moment of irritation aver they will not stage at the same show again—at least under the same judges. These persons, however, generally alter their minds if they have anything of special merit, and when they win no fault is found with the adjudicators. It is not suggested that those officials cannot err. Some of the most experienced have occasionally overlooked something in the conditions, but as a rule they are very glad to have this pointed out. A formal protest in reasonable terms, and the grounds stated, will insure a re-inspection and, if called for, a rectification; but after the second examination, let the result be what it may, the question should be regarded as settled, and if the officials of a show are satisfied that justice has not been done they must be left to make the best amends they can and employ different men to act another year. All objections to awards should be made in a calm business-like way to the secretary, noisy contentions in a show room being the reverse of creditable to those who share in them, while they are highly distasteful to visitors and may be damaging to a society.

It should always be remembered that judges who are worthy of the position are supremely disinterested. They do not wish to know the names of competitors, and care only to discover the faults and merits of what may be under examination, not giving a thought to whom the products belong. If they acted on any other principle they would be totally unfitted for the important duty with which they were entrusted, and it is safe to say they would soon be “found out.” Assuming that the adjudicators employed are competent, and a prize, it may be a third prize of small amount, is lost to an exhibitor who ought to have won it, there is the possibility that the judges are not alone in fault. No one who has had long experience in connection with exhibitions can ignore the fact that in the case of not a few the rules and regulations might as well not be printed, so far as they relate to the hour at which the judging must commence. The encroaching of exhibitors on the time of the adjudicators often compels the latter to “rush through” their work in about half the time that is necessary for doing it properly. If, for whatever reason, exhibits must be admitted long after the stipulated time for the completion of the work, an additional number of judges should be employed in order that the awards can be made in a satisfactory manner before the inrush of exhibitors and general visitors. That is an important matter for insuring accuracy, and there can scarcely be a doubt that more errors occur through hurried work, the direct result of unpunctuality, than from all other causes; yet the man who is half an hour or more behind time in arranging his exhibits, and who loses a prize he thinks he ought to have won, forgets that if the rules had been adhered to he would not have had even a chance of winning. The men who win the best and the most prizes are seldom late in staging.

These remarks are founded on experience gained over a series of years at exhibitions in various parts of the kingdom, and they are recorded with the object of impressing on all the desirability of assisting as far as they can, and in the best way that is open to them, in making the November gatherings enjoyable and satisfactory. One word more on winning and losing prizes. To win modestly and lose manfully are virtues, and those who possess them are held in the highest esteem in the horticultural world.

PREMATURE DEFOLIATION OF PLUM TREES.

In the early stages of leaf development Plum trees are peculiarly liable to attacks of aphides, especially if cold easterly winds are prevalent and prolonged. These differ somewhat from the common green fly, which, however, changes colour with the species of plant or colour of wood and foliage attacked, therefore difference in colour is not to be taken as constituting a specific difference. The aphid attacking the young shoots, tender leaves, and sometimes the insipid clusters of fruit of the Plum trees is invariably of a very

light green with a decidedly blue tint, shining, and with a mealiness in its location rendering it less assailable by water or insect-destroying solutions than common green fly—indeed, it is rather difficult of dislodgement and destruction, yet not so hard to kill as brown or Peach aphid, nor so impervious of attack as black or Cherry aphid. Plum aphid (*A. pruni*), however, gives trouble enough, and if unrestrained prejudices the crop, causing the fruit to be cast or preventing its development, the deposits also interfering with the proper elaboratory functions of the leaves. What with the sap abstracted and the deposition of honeydew upon the leaves, which sooner or later is taken possession of by a black fungus, the trees are greatly impoverished, the fruit being ill fed and the foliage falls prematurely. Nor does the mischief end with the current crop, as the foliage being cast early the wood is poorly stored with food, and the bloom buds do not attain to full development. In result the trees may blossom beautifully, but very little will set, or if setting the insipid fruit does not swell, being lost in its early stages. The remedies for aphides are legion. Tobacco water—one gallon of tobacco juice diluted with six gallons of soft or rain water syringed over the trees so as to thoroughly wet the whole, particularly the young growths and the under sides of the leaves, is effectual. Apply it on a calm warm evening, and wash the trees with clean tepid water the following evening, or if the attack be severe repeat the application of tobacco water, and thoroughly cleanse the foliage the following morning by syringing with clear tepid water. Tobacco water may be made by soaking 1 lb. of the strongest shag tobacco in six gallons of boiling water, covering it, and allowing it to remain until cool, then strain it through a hair sieve; 1 lb. of softsoap added will render it more efficacious. Of all the remedies soapsuds, where bleaching powder or much soda is not used, is a cheap, easily obtainable, and a good killer of aphides. The suds ought to be strained through a hair sieve, and syringed over the trees in the evening. Unless, however, it is known for certain that soap and a little soda only are used it is perhaps best to leave soapsuds alone, though when they can be relied on they are excellent as a wash for fruit trees from the fruit setting until midsummer, the soapsuds being followed within twenty-four hours with clean cold water, forcibly applied with a syringe or engine. Nothing surpasses soapsuds and cold water as a Plum aphid destroyer.

To show that there is no excuse for premature defoliation of Plum trees through attacks of aphides we may mention a solution of softsoap, 4 ozs. to the gallon of water, as handy and effectual, and all the more so if a gallon of tobacco water be added to every five of the soap solution. In the soapsuds we have soda, and in softsoap potash, which constitutes the difference between hard and soft soap. The soaps have a decidedly alkaline reaction, the proportion of alkaline bases being 8 to 9 cent. of soda and potash respectively. Then there is quassia water—1 lb. quassia chips boiled in four gallons of rain water for a quarter of an hour, allowed to cool, and after straining 1 lb. softsoap is added, and when thoroughly dissolved syringe the tree thoroughly on a calm evening, and follow in half an hour with clear tepid water.

There are many other insecticides, all of which are, so far as we have tried them, efficacious when the directions are strictly followed. Plum aphides, however, require a rather stronger application than is advised for green fly, and sometimes it is very tenacious, in which case gas liquor may be used, diluted with not less than twice its bulk of water. If used too strong it will brown the foliage, therefore it is well to use two parts of water and one of the gas liquor, well drenching the trees with a fine-rose syringe or engine, and wash off with clear water the same evening as the diluted gas liquor is applied. Repeated on two or three consecutive evenings it is certain to effect its purpose, and is equally useful against brown and black fly; not the least of its merits is that of its having considerable manurial value. Perhaps it may favour the development of fungi, as nitrogenous matter has a decided tendency that way. That, however, is given for what it is worth, and the gas liquor is certainly less objectionable than insecticides of a decidedly poisonous nature, such as Paris green, though that is a certain destroyer of insects; 1 lb. of the preparation mixed with thirty gallons of water syringed on the trees is certain to effect its object. It must not be used on trees that have the fruit advanced, and which will not have several forcible syringings with clean water after its application, and never where there are vegetables beneath the trees, and it must be kept from the hands of the operator, as it will be sure to find the least scratch, and produce serious ulcerations. Poisonous insecticides ought never to be trusted in the hands of the inexperienced—the most careful cannot be too cautious, and all should adhere as far as possible to the safest, leaving the dangerous to experts.

In last year's *Journal of Horticulture*, December 13th, 1888, page 532, I directed attention to the very troublesome red rust, or red fungus. In 1887 it was first noticed infesting a few

leaves of some trees against a wall under glass. Its attacks were, so far as we noticed, confined to the trees indoors, and had no apparent prejudicial effect on the crop. In 1888 the trees inside were much infested, the fruit as well as the foliage being seriously damaged, the trees being defoliated by early September. In 1888 the fungus attacked some trees on a wall adjoining the Plum house, and it spread in virulence proportionate to the distance—i.e., the tree adjoining the Plum house was as badly attacked as any in the house, and lost their leaves almost as early, the attack on the other trees on the wall being less as the distance increased, ceasing at the eighth tree, where there is a break from Plum to Pear trees. Other trees farther away were free from attack.

This year there has not been, as we anticipated, any mitigation, but rather an increased severity of the fungus attacks. In the house there was a determined attack of aphides, which succumbed very tardily to tobacco fumigations, and syringings were freely given to cleanse the foliage. Singularly there was no attack this year by the small green caterpillars, either in the house or on the trees outdoors that in the previous year were attacked by the fungus, but wherever the fungus appeared in 1888 aphides attacked in 1889. The fungus did its work so effectually that though we had a full crop of fruit it did not attain perfection. It partially ripened, but the fruits did not reach their full size, and had little flavour. Green Gage, for instance, had less than the quality of Orleans, and Jefferson and Coe's Golden Drop were less palatable than Victoria, in fact the dessert varieties were less saccharine than the usual culinary varieties. The foliage was cast shortly afterwards—i.e., after the premature ripening of the fruit, and whilst it remained with the fruit the spores of the fungus were shed in a very abundant minute powder, giving the upper part of the Plums a coating of black or deep purple. So light and minute is the dust that a puff of wind might blow it anywhere. The trees were defoliated for the most part early in September, not all the leaves falling, but those earliest and most severely attacked, and the characteristic is that the upper part of the trees lose the foliage soonest.

Trees on the wall outdoors attacked by the fungus in 1888 were still worse this year; even Victoria, which escaped in 1888, was defoliated when the fruit should have been ripe, for the ripening was not more than partly or badly done. The worst infested was Purple Gage, and Green Gage was so badly attacked that the fruit in one instance did not ripen, or only so indifferently that even wasps would not trouble to eat it, and they have been more voracious than usual this year.

The fungus has spread to other trees on walls over a hundred yards away. Being the first year of attack the foliage was still on the trees on October 21st, indeed fruit was on one tree—viz., Roe's Autumn; in fact the fungus pervades nearly every tree, and it is most effective on trees that have the most soft growth, as for example a Belgian Purple on a north aspect, though late attacked, was completely defoliated by early September. Albeit, some Damson and Winesour trees were equally as early, the fruit of the Damsons shrivelling on the trees.

This defoliation is strictly due to the fungus, for be the trees ever so clean an attack of the fungus is certain to cause early defoliation. That it is common to all the Plum tribe, and affects equally the wildling as well as those cultivated, whether in the open or under glass, I hope to prove to you by the specimens accompanying—viz., leaves of the Bullace taken from a tree in a shrubbery adjoining the garden, and which I consider is the parent of all the mischief in this case, others from trees against a wall, and some from trees under glass. There is no question, so far as I can make out, of the identity of the fungus. It spread from the Bullace to the Plum house, came, as I hinted last year, through the top lights in the late summer or autumn of 1886, infested the Plum house in 1887, extended to the trees on the wall adjoining in 1888, and over the whole garden in 1889. This points to the prevention of disease in Plum trees by the removal from the neighbourhood of Sloe, Bullace, and kindred trees, as both disease-producing insects and fungi live on such and spread to others of the same kind.

As the fungus lives inside the leaves it is not to be reached after the red spots appear. It takes nourishment from the leaves and prevents the proper fulfilment of their functions, but it opens in due course on the under side of the leaves, and then sheds its spores. Syringing with a solution of potassium sulphide effects a radical change in the persistence or life of the leaves, and it may effect the destruction of the spores. I am trying it, and am satisfied of its beneficial tendency. Then all the leaves as they fall are collected and burned, and this with the syringing with the solution of potassium sulphide, half an ounce to the gallon of water, not omitting the floor and border, and pointing the ground over in early spring before the young leaves burst from the buds is expected to mitigate if not insure freedom from attack. Perhaps it would be as well to employ softsoap solutions alternating with quarter of an ounce potassium sulphide solutions before the buds burst, and after

the fruit is set as soon as safe up to say the middle of June, or even until the fruit is so far advanced that netting it becomes undesirable. Water syringings alone have no deterrent effect, but rather contribute to the increased severity of the attack, as also does a confined atmosphere, which, however, may be due to the weakening tendency of heavy and continued syringing, similarly to a confined atmosphere preventing evaporation and the consequent softening of the tissues. Will some of our scientific friends kindly tell us if I am on the right track? Mineral matter, such as lime, with phosphor and sulphur and gas lime, is to be tried at the roots.—G. ABBEY.

BOUVARDIA CULTURE.

HAVING the privilege of serving a gentleman who prefers the Bouvardia to any other greenhouse plant, and having in former years grown them for Covent Garden, we have managed to attain a considerable amount of success with these plants here, and I am tempted to offer a few remarks on the subject of their culture to those who hitherto have not been so successful as they desire.

I do not propose giving any historical information, such being probably known to all, neither shall I mention any variety but those I have grown; for that reason some of the older forms and those introduced during the past year will not be alluded to. Supposing the reader to be already in possession of plants, or about to purchase them, they will now be in flower, and should be placed in a house where a night temperature of from 45° to 50° is maintained, with a rise of 10° or 15° by day. In cold weather a rise of 10° is ample, allowing, however, an additional 5° in bright weather. In this house they should remain until they have done flowering. Water should be given as required, using weak liquid manure at each alternate supply. When flowering is completed they may be stood under the stage in the same house, sufficient water being given to keep the wood plump and no more. It is customary in some gardens to dry them off, similar to Fuchsias. I did it once, and lost several plants—in fact, two or three varieties were lost altogether, and as I had to make the latter good at my own expense I received a lesson to be remembered. About the second week in March our plants are cleaned and pruned. Plants from last year's cuttings are shortened back to 4 inches from the pot; those a year older are cut back to within a couple of inches of where pruned the previous year. Older plants are treated in the same way—that is to say, all growths are left 2 inches longer every year. The plants are then placed in a vinery that is always started at that date, and kept regularly supplied with clear water, syringing them in the mornings and when closing the house. When the plants are breaking well into growth they are repotted. The soil used consists of loam two parts to one each of peat and leaf mould, with sufficient sand to show plainly through the soil; with the exception of the leaf mould, which should be passed through an inch sieve to free it from sticks, the compost should be broken up by hand, and all wireworms looked after sharply. I am no advocate of starting them in small pots and subsequently placing them into larger pots. We have no time in this part of Ireland now-a-days for such proceedings, and the planting out method not proving satisfactory with me it has been abandoned, and one potting a year is all the plants have. About half of the old soil is carefully picked out, perfectly clean pots one size larger than those previously occupied are carefully crocked, covering the crocks with moss, then a small quantity of the roughest of the compost over the moss, followed by a handful of half-inch bones, and the plants firmly potted with the aid of a rammer for the largest pots at the same level as they were before. They are then returned to the vinery, and syringed three or four times daily until about the fourth day, when they are all watered through a fine-rosed pot. After this syringing is only done twice a day in the morning and at closing time.

If desirous of increasing the stock, as soon as the growths are long enough cuttings are inserted thickly in 4-inch pots, and plunged in a propagating case until rooted, when they are potted singly in thumbs, and returned to the case until established. They are placed in the vinery with the older plants; when the roots are well through they are shifted into 4-inch pots to flower in. As soon as rooted the point should be pinched out, stopping them afterwards at every second joint until the end of June, when stopping is discontinued. When no cuttings are required the old plants are pinched as soon as possible after two joints are made, continuing in this way until the end of June. The plants are removed from the vinery early in May to cold pits and frames, covering with mats at night; the covering is reduced gradually until by the end of the month none is used. From the commencement of June more air is gradually admitted both night and day, while during July and August the lights are taken off entirely; should, however, a long spell of wet weather set in they are placed on until fine weather returns once more. During September the

quantity of air by day is daily reduced, and the frames closed at night; at the end of the month they are taken into the greenhouse, when they commence flowering, and continue to do so until well into the new year. The syringing is done twice daily in fine weather until the plants are housed, when it is discontinued. Before taking the plants to the greenhouse they are staked and tied; one stake only is used, to this the central growth is tied, and all remaining growths are slung to the stake with slender strands of raffia.

Good varieties are Alfred Neuner, double white; Bridal Wreath, blush; Vreelandi (Davisoni), white; Dazzler, bright scarlet; elegans, scarlet; flava, yellow; Humboldti corymbiflora, beautiful snow white, scented; Maiden's Blush, rosy blush; President Cleveland, intense scarlet; President Garfield, double pink; Priory Beauty, pale rose; Reine des Roses, rose pink; The Bride, pure white; and Victor Lemoine, double reddish purple.—HANDY ANDY.

FRUIT JOTTINGS.

ON page 352 a few notes were given as the result of a visit to Sawbridgeworth, and to those the following may be added as the result of the same journey.

ORANGES FOR USE AND PROFIT.

Of the many interesting features in Messrs. Rivers & Son's establishment the house devoted to Oranges and allied plants is certainly not the least attractive. Early in the present century orangeries were much more frequently seen in gardens than at the present time, though in some old establishments the buildings still remain generally employed as conservatories or stoves. Unfortunately they are in too many cases heavy dark structures quite unfitted for plants of any kind, and particularly so for Oranges, which may in a great measure have led to the discontinuance of their culture. The enormous increase in the importation of Oranges, however, has been the chief factor in this matter, as when the fruit could be purchased three or four a penny on the hawkers' barrows it seemed ridiculous to give the plants valuable space under glass. Another point, too, is that the large old trees formerly grown in immense tubs occupied a considerable amount of space, and when they became weakly with age and not too liberal treatment, rarely flowering, still more rarely perfecting eatable fruits, and infested with insects of divers kinds, they were neither ornamental nor profitable. In some continental gardens the old fashioned orangeries have been retained and are still employed for their original purpose, notably at the King of the Belgians' Palace at Laeken, where, under the charge of Mr. Knight, are some of the largest healthy specimens we have ever seen. They are only, however, maintained in good health by very liberal treatment, frequent top-dressing of manure, and constant attention to keep them free from insects; they necessitate a great amount of labour, especially in removing them every summer to the open air and back again in autumn to the orangery.

A large proportion of the varieties formerly grown are comparatively worthless, and this combined with imperfect ripening rendered them a very unsatisfactory substitute for the better selected imported fruits. No doubt they were frequently chance seedlings raised here that had never been duly proved by comparison with others, and after they had been grown for several years there was a natural reluctance to destroy them. It has, however, gradually become known to a few cultivators in this country that some of the varieties now grown so extensively in the West for importation to this country are greatly superior to others, and further that when taken in a properly ripened condition from the tree their flavour is much richer and the quality better in all respects than the imported fruits that are necessarily gathered before they are ripe. Such home grown fruits have occasionally been placed before the Fruit Committee of the Royal Horticultural Society, and invariably with the result that the members have been surprised at their quality.

Messrs. Rivers & Son have given their attention to these plants for many years, and the result is that they have a light span-roofed house filled with moderate sized trees in small pots, representing a series of carefully selected varieties. Apart from the ornamental value of well grown Orange trees, as their fragrant flowers, golden fruits, and rich green foliage are unsurpassed, they are exceedingly useful as affording an addition to the dessert that all can appreciate who have once tasted thoroughly ripened fruit from under glass. Some of the best of the St. Michaels varieties are Sustain, having a peculiarly delicate flavour and abundant juice; St. Michaels, with a very thin fine rind and of excellent flavour; Exquisite, one of the same type, differing slightly in habit, foliage, and the form of the fruit; and Silver, one of the best of the group. In the Malta

varieties, the Blood, Oval, and Pernambuco Orange are all good. Several varieties of Lemons and Limes are also grown, and the lighter yellow colour of their fruits contrasts beautifully with the Oranges.

Culturally, one important point must be noted, and that is the stock upon which they are grafted, a matter which does not usually receive the attention it demands. It has been the custom to raise seedlings indiscriminately from any Orange pips and then graft upon these, but this has been proved at Sawbridgeworth and elsewhere to be as erroneous as any haphazard method of action can be. After trying a variety of stocks the common Lemon has been found to be the best to promote early bearing with a compact habit and fine fruits. This accordingly is now the practice adopted, and I understand that in Australia and Florida, where Oranges have been so largely planted in recent years, the same course is followed. Then for soil a good turfy loam is employed with sufficient sand to render it porous; thorough drainage is provided and abundance of water supplied both to the roots and over the foliage. Beyond the maintenance of a genial and even temperature nothing is requisite except an occasional thinning or shortening of the growths and close watching to see that the plants are free from insects.

STORING FRUITS.

All who are concerned with preserving the supply of Apples and Pears as long as possible know full well the difficulties there are to contend with. Some advocate placing the fruit upon the open shelves or staging in the fruit room; others employ straw, hay, or paper as an absorbent material, upon which the fruits can rest, each having its special recommendations and disadvantages. The great desideratum is to have a material that is quite devoid of odour, as the flavour of fresh fruits is very readily affected by anything of a foreign character. At Sawbridgeworth, after many experiments, ordinary burnt earth has been adopted as the best substance for the purpose, and it is placed in a layer an inch or two deep over slates. A small span-roof house has the roof thickly thatched in the place of glass, leaving only spaces at the ventilators for the admission of light and air. The path in the centre has a well edged bed on each side, and these are devoted to storing samples of the principal varieties of Apples and Pears.

SEEDLING FRUITS.

The Sawbridgeworth Nursery is not only a fruit-growing establishment, but it is also one in which fruit-raising has been carried out with remarkable success for a long period. This is chiefly due to the fact that it was commenced a considerable time ago by the late Mr. Thomas Rivers, who derived much pleasure from what subsequently proved a very profitable occupation. Thousands of seedlings were raised of Peaches, Nectarines, Apricots, Plums and Pears, many of which resulted from the careful crossing of approved varieties that were likely to produce the best returns. In all cases records had to be kept, and the seedlings watched for years before it was known whether they would prove distinct or useful additions to the lists. They were crossed not only with a view to the improvement of quality, but also to extend the season during which such fruits could be gathered either under glass or out of doors. The last is an important matter, and much has been accomplished in that direction amongst Peaches, as already noted. In one of the editions of "The Orchard House" Mr. Rivers had some remarks on this subject. "To give the reader an idea of the pleasing uncertainty of raising seedling fruits, and that a stone from Early Beatrice may produce an October Peach, I may mention that a large Peach raised here from the Early York Peach some years since, is a fine late sort, ripening early in October; the cultivator may also expect Nectarine trees from Peach stones, and Peach trees from Nectarine stones. Plums and Cherries vary to a great extent when raised from stones, and are most interesting. They in common with Peaches, Nectarines, and Apricots should be grown in pots in the orchard house, where they will commence to bear at about four years old. A hard hearted cultivator must select the seeds for the production of new varieties; he must choose the finest and best flavoured fruit, as no seedlings must be raised from inferior fruit." He observes elsewhere, too, with regard to Peaches that twenty stones from the Royal George Peach will not produce two alike in all characters, while Noblesse and some of the yellow-fleshed Peaches are reproduced nearly true from seed. The most difficult trial is after growing seedlings for five or six years to have to discard so many, yet this has to be done unflinchingly, as it is obviously useless keeping varieties that show no advance on those ready known, and, of course, in some instances they are even inferior. Still, the selected seedling Peaches, Nectarines, and Plums sent out from Sawbridgeworth are more numerous than could be expected. Thus of Peaches twenty-six are of proved merit, of Nectarines nineteen have taken a similar position, and of

Plums nineteen have also been secured, the latter including such thoroughly useful varieties as Early Rivers, The Czar, and Monarch.—POMONA.

ASPARAGUS.

THE most general mode of forcing this vegetable is by making hotbeds in the usual manner about 3 feet high of well prepared manure. It is important that the bed be well prepared, as the roots are very quickly injured by a strong heat, especially when accompanied with much steam. The manure should have repeated turnings, so as to allow all rank steam to escape previous to being made into beds. When these are finished the frames and lights may be placed on, leaving them so until the bed has attained a regular heat; after this tread the surface evenly.

The roots may be from three years' growth upwards. These can be lifted from the beds in the garden, exercising great care in this operation, as the roots are very brittle. Previous to placing these on the bed it should be covered with a few inches of dry light earth, spreading it evenly, then commence at one end, and place the roots close together in a regular manner, keeping them level and the crowns uppermost. When the frame is full these may be covered with some fine light soil, filling all spaces between the roots, which may be covered to the depth of 4 or 5 inches.

There is not much likelihood of the heat becoming too strong if the manure has been properly prepared. However, should this take place the lights may in fine weather be taken off, which will allow the rank heat to escape. When the buds begin to grow air should be admitted, and after they appear above ground the lights may be removed for a short time on fine days. Air should be admitted as much as possible, or the shoots will be drawn up weakly without colour or flavour. If the bed becomes too dry water must be given with a fine-rose pot, using water of the same temperature as the bed. The heat will be sufficient if the bed keeps about 50° at night and 60° by day with the sun heat. Should it, however, fall below 45° linings must be applied. It is advisable to keep the temperature from 50° to 60° throughout. If wanted for succession the beds may be made up and planted at intervals of three weeks.—A. G. FRAMPTON.

PRUNING SHRUBS.

THE proper time to prune or cut back trees and shrubs is a question often asked in the Journal. If experience warrants anyone giving an opinion on the matter I do not think that I need be afraid to state mine, as we annually do much of this kind of work. Our pleasure grounds extend to between 30 and 40 acres; nearly the half of this area is covered with trees and shrubs, and many cartloads are cut from them every year. We cut them with two objects in view—the first to keep them in shape, the second to keep them within due bounds.

In cutting the shrubs into shape great care should be taken that this is not overdone, as nothing detracts so much from the beauty of a choice tree or shrub as cutting it into a formal cone. Our rule of cutting into shape simply consists in removing one of the leaders when two are forming, or cutting a few more points from one side than the other as the growth demands. In doing this we endeavour to cut without leaving any signs that pruning has been done. This applies particularly to single specimens on lawns, and isolated shrubs which stand apart from or above others in groups.

Cutting to keep shrubs within bounds is generally practised on Yew and other hedges, and on shrubs growing close to walks and flower borders and also in clusters together. Hedges may be clipped smooth like the face of a wall, but Rhododendrons and similar evergreens should be cut with the knife only, and that just to remove the intruding points, leaving no stumps in a prominent position where only a surface of leaves or leaf-bearing shoots should be seen. Apart from this, however, the form and style into which trees and shrubs are cut will follow the owner's taste in many instances.

The time of cutting is of very great importance. In situations where the winters are mild and cutting winds do not usually prevail in the spring every kind of tree and shrub that will grow unprotected in the open air may be safely cut, clipped, or pruned from the beginning of November until the end of March. Cutting before November when the shoots may not be matured often causes them to die-back more or less from the wound, and to cut them when growth begins in April or during the growing season injures many of the more tender sorts. In districts where the winters are generally frosty and severe only shrubs of the very hardiest description should be pruned until the latter end of March,

and by that time it is, as a rule, always safe to prune any kind of shrub as freely as is required.

The prunings of all kinds of shrubs cannot be more profitably disposed of than by burning them; the ashes make an excellent manure for the kitchen garden. They suit all kinds of vegetables, and when mixed with a little soil they are excellent for covering Onion and other seeds.—P.



ORCHID NAMING.

THIS subject is now under discussion, and the Committee appointed by the Royal Horticultural Society will no doubt do their best to remove some of the anomalies and inconsistencies of the present system, or want of system. In connection with it there are, however, two or three points upon which I wish to express an opinion, and I should like to see others do so with the same object in view. First, as the intention obviously is to deal with garden nomenclature only it is evident that the subject ought to be submitted to horticulturists and be determined by them. Botanists professedly disregard the numerous varieties which are prized in gardens, and therefore it does not come within their province at all; farther, it is an unfortunate and deplorable fact that a discordant feeling exists between them and horticulturists, and it has always been a most difficult matter to effect a combination of the two that would work harmoniously. This feeling is undoubtedly less than was the case at one time, and broad-minded men are conscious of the advantages arising from the mutual assistance of theoretical and practical knowledge; still, it is quite as inadvisable for botanists to dictate to horticulturists in purely garden matters as it would be if the case were reversed. Any system of nomenclature proposed by the R.H.S. for Orchids or other plants as occupants of gardens should, to ensure anything like general support, be horticultural and not botanical rules.

If the botanists adopt one system of nomenclature, and it is found to be suitable, there is however no reason, as far as I can see, why the horticulturists should not name their plants in the same way if they wish to do so. On the other hand, it is desirable to make some distinction between introduced wild plants and those raised under cultivation, and this is most readily effected in the ordinary way by the adoption of popular names for garden plants where the differences are very slight and where the plants admit of rapid increase either by seeds or cuttings; what is termed botanical names, or those compounded from the Latin and Greek, being reserved for introduced plants. There is very little difference of opinion on this matter, and if this is all that the Committee has to determine it will no doubt soon complete its work. It is easy to separate introduced and home grown plants into two clearly defined groups, and it seems preferable to rest any distinction in nomenclature upon this than upon doubtful characters.—PRACTICAL.

ODONTOGLOSSUM VEXILLARIUM.

IN many gardens only two divisions exist in which Orchids are grown—one cool and the other warm. It is therefore often difficult to give plants that require an intermediate temperature the exact treatment they need during the winter. If grown too warm the above-named Orchid quickly assumes a sickly appearance and becomes a prey to yellow thrips. This is not all; growth is forced much more quickly than is desirable, and the foliage in consequence is weak and incapable of supporting itself. Under cool treatment the plant goes back rapidly, and one evil is equally as bad as the other. Since we have maintained a higher temperature in the Odontoglossum house we have not experienced so much difficulty. At one time we had hot-water pipes only down the centre of a narrow span-roofed house for Odontoglossums, and the plants on the north side suffered severely at the back of the bed. This led to two 1-inch pipes being taken off those in the centre and arranged along the ventilators on the north side. These have acted admirably, and close to the central division we have now the exact place for *Odontoglossum vexillarium*. The night temperature ranges from 55° to 60°, according to the weather, and the plants are at home. Until this arrangement took place they were removed early in November to a plant house, where an average night temperature of 55° was maintained. It is a mistake to keep them either too warm or too cool for the mere sake of keeping all the

Orchids together when more suitable treatment can be accorded to them in some other structure that may not be devoted to Orchids.—N. G.

DENDROBIUM FALCONERI.

WHEN well grown this *Dendrobium* is one of the finest in its genus, its free graceful habit and abundant richly coloured flowers rendering it a charming plant in any warm Orchid house or stove. It is true some found a little difficulty in its cultivation, but the chief point is no doubt, as with other species, to insure the growths being well matured, with the provision of a light airy position. Mr. B. S. Williams says, "During the growing season it likes a good supply of water; but after it has finished growth, which is by autumn, it should be kept rather dry till it begins to show flower, but must never be allowed to suffer for want of water, as it frequently grows during the winter months." This exactly accords with my experience, and it is certainly not nearly so difficult to

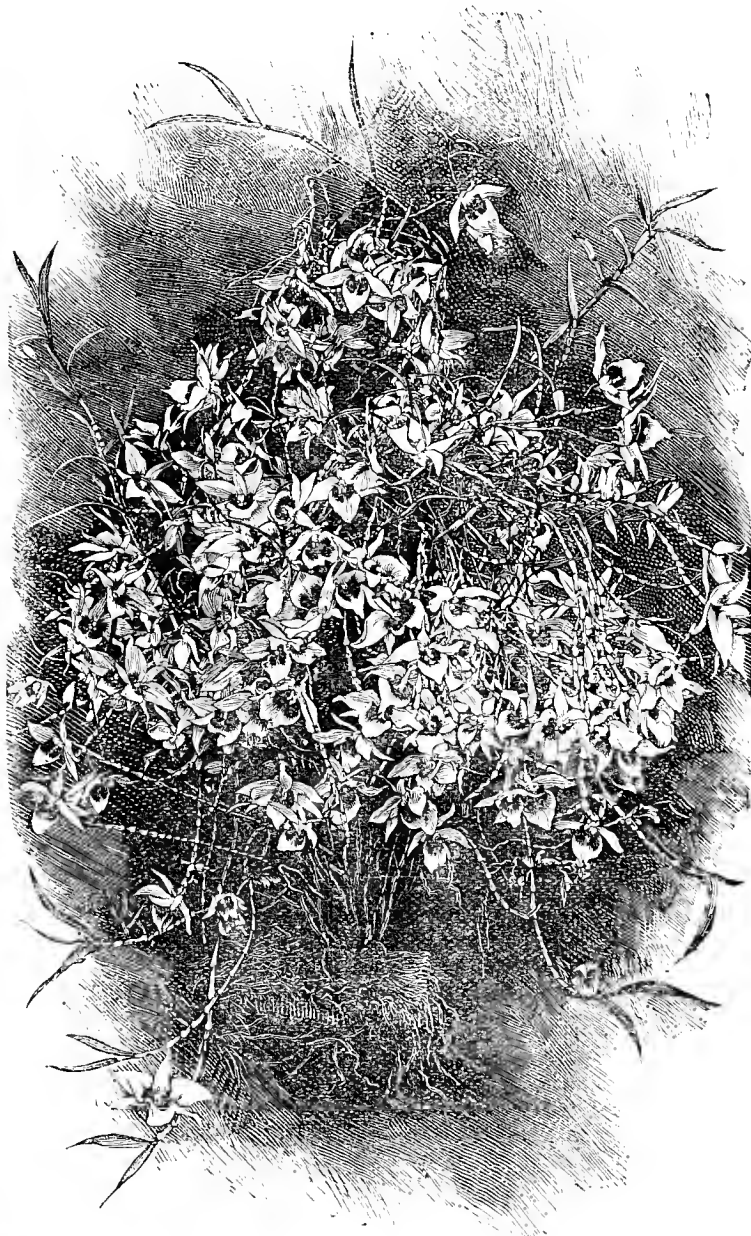


FIG. 46.—DENDROBIUM FALCONERI.

flower *D. Falconeri* every year as some other species, particularly those from Australia.

One of the attractions of this *Dendrobium* is the great size of the white lip and the wonderfully rich colour of the broad central crimson purple spot; the sepals and petals also are frequently tipped with purple. The central blotch is usually surrounded by a zone of orange, and the tapering part of the lip is frequently coloured like those of the sepals and petals. Several varieties are cultivated, one of the finest giganteum being that represented in the woodcut (fig. 46). There is another named *Jacksoni*, which is so distinct that it has been regarded by some as a species. It seems, however, to be simply a form of *D. Falconeri*, but differing in its leading characters. The flowers are usually smaller, with shorter sepals, petals, and lip; the latter more of a golden hue and wanting that peculiarly rich crimson spot so much admired in the ordinary *D. Falconeri*.—B. W.

CATTLEYA LUTEOLA.

THIS is a very distinct species, and also very rare; in colour it somewhat resembles *C. citrina*, but bears no other similarity, and we cannot do better than quote Sir Wm. Hooker's description, which was prepared from a specimen in the then celebrated collection at Tooting:—"Our plant has an annulated branched rhizome about as thick as a duck's quill sending down from beneath a few thick fleshy fibres, and upwards from the short branches elliptical, quite smooth, and compressed pseudo-bulbs, which bear one leaf, and while young are enveloped in a large sheathed, membranous, striated, sheathing scale. These increase in age, and eventually become oblong, nearly terete, and sulcated; leaf about 3 inches long, thick, succulent, dark green, elliptical, veinless, with a deep notch at the apex. From the base of this leaf, at the top of the pseudo-bulb, arises the peduncle scarcely 2 inches long, enveloped entirely in a compressed membranous sheath, slit open on one side, four, five or more flowered; flowers racemose, pale lemon yellow, small for the genus; sepals and petals uniform, $1\frac{1}{2}$ inch to 2 inches at the most long, oblong lanceolate, obtuse, a little waved, all spreading; lip about as long as the segments of the perianth, three-lobed, velvety within, the side lobes elongated, incurved, meeting over the column, and forming a kind of tube; the terminal lobe broad, almost orbicular, crisped and ciliato-dentate at the edge, column much shorter than the lip, semiterete." It blooms during October and November. Native of Brazil. 1853.—T.

TREATMENT OF SOILS AND MANURES
AND CROPS.

I HAVE given the principal constituents of several manures. I will proceed with the various crops, the sowing, planting, and the preparation of the soil and the plots that they ought to occupy. I ought not to pass over two very valuable manures that often come within the reach of the gardener—viz., the deposit of a pond or the bed of a river. I would strongly recommend its use in the garden. The river deposit is very rich in all the mineral elements, and the pond, while also rich in them, still contains more organic matter, and both can be used upon any soil with great advantage. Road scrapings ought also to be used, particularly on heavy land. The refuse from ditches should be reduced to ashes before being used. To put my recommendations in my first article in a better light I will give what I have to say in as simple and practical way as possible.

CAULIFLOWERS.

The exact time of sowing must depend upon the locality; the 1st of August is a good time for the north, the 15th to the 25th the midlands, while the end of the month is suitable for the south. Sow the seed on a good open border. The soil does not require a special preparation; it ought nevertheless to be well dug and rammed down firmly, the seed sown broadcast, raked in, and protected from the birds.

One of the plots left vacant by Onions, Peas, Beans, or Celery should receive a good dressing of manure. That vacated by Celery will require less than the others; provided it has been well done a simple dressing of lime will suffice, and in the other cases it ought to be applied with the manure. In both cases incorporate the manure and the lime well with the soil, as the greater the diffusion the more their value is enhanced; in all cases trench the ground. I would sow Walcheren for this district the second week in August; as soon as they are large enough plant them out in the prepared piece of ground at half the distance required. In the spring thin to the proper distance and fill any of the vacancies left by the frost. These plants will form heads in May and June, according to the district. A good system practised in some parts is to plant a score in a handlight and transplant in the spring. The seed bed should not be destroyed till the plants are safely on the way, as any blanks can be refilled. Market growers and others around London plant Cauliflowers in a triangle, and place bellglasses over them. I recommend this in all cases where very fine early heads are required and glasses can be had. Allow the plants plenty of light and air all round, then they will not require transplanting in the spring. The bellglasses should be either tilted or taken off as the weather permits. It must not be lost sight of that the constituents of the Cauliflower are 21 per cent. of sulphuric acid, 12 phosphoric acid, 20 soda, 11 potash, 20 lime, and that the nature of the soil is the index to its treatment as regards the manuring. If it is calcareous no lime is requisite, but if it is full of humus then apply lime. The finest Cauliflowers I ever saw were grown on a piece of ground where a quantity of night soil had been used together with some blood prepared in lime.

At the beginning of February sow in gentle heat Veitch's Early Forcing Cauliflower. This is one of the finest varieties. It

starts away readily when planted out, and seems to rejoice in the different changes, and races hard to come in before the autumn-sown Walcheren. When large enough prick them out or pot them, and stand in a cold frame. If sufficiently hardened and the weather permits plant out in the beginning of April on a good border, and another batch at the end of the month, on an open quarter of the garden, to form a succession. At no period should they be allowed to suffer either in the pots or boxes, and if supplies of cesspool water are given and they are hoed freely a good crop will be the result.

The piece of land vacated by the crops already mentioned should be immediately manured and trenched. If no "snatch crops" are wanted sow with anything that will spring up, and grow during the early autumn months, and in the spring turn this in. If plenty of manure is at disposal, or a slight dressing of lime can be dug in which will decompose the green herbage, so much the better. Celery ground will not require trenching for Cauliflowers. The various sowings and plantings must entirely depend upon the requirements of the family. I would sow Walcheren upon a warm border at the beginning of March; these will come in for planting out in April, and for cutting in July, and August, and September. In April sow Veitch's Autumn Giant or any other variety for early autumn cutting at the end of August, in September, and beginning of October; Veitch's comes in excellently for this sowing, and would recommend it to those that have not tried it. During the middle of May sow Autumn Giant for late autumn work. Where the first Peas are off in May or at the beginning of June it is not necessary to keep a plot of ground for this planting of late autumn Cauliflower. Plant out during the end of June, always selecting showery weather if possible, but if not able to do so puddle the plants in and keep the ground well hoed and watered until they are established.

One thing I ought not to pass over, that is the necessity of looking after the late Autumn Giant. It protects itself better than any other, but when pulled up in frosty weather with good heads and laid in a shed out of the way of the frost they will keep a month or six weeks and be none the worse for table use. Those not headed enough should be placed in a frame, taken up with as large a ball as possible, and if protected they will form good heads in January. Always plant 2 feet apart for a crop, and when trenching turn the manure in at the bottom. If the subsoil is very poor only bastard trench, and throw a few spadefuls over the surface, so as to gradually improve its depth; lime has a wonderful effect upon bad subsoils.

CABBAGES.

Cabbages are almost always to be had in gardens in some form or other, but they are not all equally good; the larger sorts are more animals' food than man's, of the present age at any rate. The various plots of ground mentioned in the treatment of Cauliflowers, together with the plots left vacant by Leeks, Potatoes, Lettuces, or Kidney Beans, are suitable for Cabbages. They like the good ground, and as the ash constituents of the Cabbage are identical with those of the Cauliflower, Broccoli, Brussels Sprouts, Savoy, and Kale, the analysis given will suffice for all. The ground should be supplied with lime if that is thought to be deficient, and in no case allow the doubt to go against the Brassica. As regards manure they more often suffer from too little than too much, and if the soil is well prepared there will be no club or ambury. In this district club is much against the gardener securing good Cabbages and Cauliflowers, and The Grove kitchen garden particularly so, yet no cases of clubbing have come under my notice. I account for this by well preparing the ground and giving the plots planted with the Brassicas a good coating of blood mixture prepared with lime and cesspool water in a mound of soil.

At the end of July or the beginning of August sow Veitch's Earliest of All for early spring cutting. I have grown this sort, and it has given me great satisfaction. Sprinkle the seed bed with soot and lime to prevent the attack of insects, and in September plant out some in a good open part of the garden. Nothing is gained by planting in close borders or corners; of course, too exposed parts must not be chosen. The plants can be planted twice as thick as wanted, thinned in the spring, and fill all vacancies caused by the frost. Keep the soil from getting battered down by occasional hoeing. This must be done, too, in the spring, and if a little soil can be drawn up to them so as to secure them against the winds they will make greater strides. I believe in clearing off these as soon as cut, or anyhow as soon as the next can follow. Some sharp winters do not leave any to be cut, and to prevent disappointment it is well to prick out fifty or a hundred plants as late as possible in a frame, leaving the lights off in all weathers except when frosty. If a two-light frame can be spared plant one light with some from the August sowing, and during September

sow the other light with Ellam's, to come in for planting out as a succession to the early. Those pricked out in the frame may be planted out in March or the beginning of April in small hoed trenches about 2 feet apart. Plant out seedlings from the frame in April as a succession. During this month sow the principal crop. Each one has his favourite sorts, and it does not matter so long as it is a good one and suits the cook.

A good quarter of the garden ought to be chosen for this crop. Trench deeply and keep all the plants well watered first with clear water, then with liquid manure. The plants can be drawn from the seed bed at different periods to fill any small corner or border as a safe way of always having some good Cabbages to cut; and it is always best to have a few to having a glut at one time and none at another. If there are any more Cabbages than wanted they can be used for the pigs.

Sow seed and plant again in May. I would sow Little Pixy or some small form to plant out after the summer crops are being cleared off. They will come in at a very useful time after most of the Peas.—G. A. BISHOP.

WINTERING CARNATIONS.

It is not so difficult to winter Carnations in safety as it was some years ago, as the plants now cultivated are generally of a more robust constitution than they were formerly. As a matter of course, I am treating of the fine named varieties that are layered in pots. If my own plants can be taken as an indication of the general experience I should say that layers have done well, as all mine appear to be rooted, and they are clean and robust. I am more and more convinced that there is nothing like early layering, and the sooner it can be done in August the better. Much depends upon whether the "grass" is sufficiently ripened, and this is a matter of the first importance, as many disappointments result from layering shoots which are too young and sappy.

The time to repot the rooted layers has come. Time was when a kind of prejudice existed against bushy plants, and when they were taken from the sides of the pots, after carefully severing them from the parent plant, the practice was to remove all decaying foliage and such small side shoots as had been put forth, the theory held being that a clean stem was always preferable to a bushy plant. In potting, a strong plant can be placed singly in a 3-inch pot, or two plants in a 4-inch pot, using a fairly stiff compost made up of good yellow loam, some leaf mould, and sand. It is better to have the compost a little heavy than too light, and the Carnation likes firm potting. Do not bury the plant's too deeply, keeping a clear stem above the soil, and they should then be placed in a cold frame for the winter.

An ordinary garden frame will do, for the Carnation is a thoroughly hardy plant, and needs protection from wet rather than from frost; but a dry base is essential to keeping the plants in perfect health during the winter. Dryness about the earth on which they stand and about the pots has a material effect on their well-being. At the Royal Nursery, Slough, the frames employed for wintering Carnations in pots are shallow, so as to have the plants near the glass, and the bed on which the pots stand is made of dry brick rubbish, upon which is laid cinder ashes, enough to make a good level surface. When placed here the newly potted plants can be shaded from bright sunshine, and be kept a little close for a few days until they become established. Then air can be admitted freely, and if the lights are drawn off and the plants have the advantage of a genial autumn shower they are benefited thereby, but drenching by heavy showers should be avoided.

Some growers of small collections did make a practice of plunging the pots up to their rims in cinder ashes during the winter. This may be still desirable in the case of any delicate growing varieties; but cocoa-nut fibre can now be employed, as it is cheap and easily procured. During November and December but little water will be required, and when it is given it should be through a fine-spouted watering pot, pouring the water gently on the surface, and taking care not to wet it in any way if it can be avoided. Water should be given only when the air is dry and bright, so that the lights can be removed and superabundant moisture expelled. A mild shower will be beneficial, only that when close muggy weather follows it is difficult to get rid of the moisture which hangs about the foliage.

Let it be remembered that the Carnation is a thoroughly hardy plant, and will endure a great amount of frost. The charge is sometimes brought against those who grow their plants in pots, that by doing so they coddle them, and make them delicate and tender, robbing them of that robust constitutional vigour peculiar to the plant. This is ignorantly made by those who know but little or nothing of the thoroughly hardy way in which the plants are grown all through the year. By growing them in pots the cultivator

has his plants under perfect control, and they run none of the risks which threaten those grown in the open air. I grow inferior varieties in the open, but all choice ones of high quality in pots; but they are as hardy as those which pass the winter in the open soil. As a matter of precaution it is well to cover the frames closely when severe weather prevails. In dull, foggy, and misty weather the lights should be so tilted as that a current of air can pass about and over the plants, and whenever it can be done let the lights be pulled off. During the winter the plants should be examined at times, any decaying foliage cut away, and the surface soil stirred.

March has been described as the most trying month, for then dry and parching winds prevail. By that time the plants are beginning to move, and will require more water when the weather is open and drying. While cold winds blow they should not play upon the plants if it can be avoided; and it is well, therefore, to open the lights opposite to the quarter whence the wind is blowing. At all times cleanliness is of the first importance.

I am a decided advocate for early transference to the largest pots. Our springs are now generally late and retarding, and as a good start is of great importance in the matter of having fine blooms in July early potting is desirable. I know some growers who begin early in March, if not before. A good deal depends upon the plants being well established in the pots in which they have been wintered. If they are filled with roots then repot into those in which they are to flower as early as possible, and do not overpot, and at all times adapt the size of the pot to the constitutional vigour and necessities of the variety.

Those who leave the ordering of Carnations and Picotees until the spring, when the plants are frequently taken from the pots in which they were layered, cannot expect they will produce such fine blooms as those potted in the autumn. I have known orders for plants sent to a nurseryman in April, at a time when the plants should be in the pots in which they are to flower.—R. D.

CYPERUS ALTERNIFOLIUS.

THIS is an easily grown plant that anyone having a greenhouse should cultivate, for none is more accommodating, or withstands indoor treatment better, unless it be the *Aspidistra* or *Ficus elastica*. A healthy well-rooted plant can be kept indoors for weeks without change if duly supplied with water, of which it requires abundance, and the foliage occasionally syringed or sponged in order to keep them free from dust accumulations. It is one of those plants that are suitable for use in gas-lighted rooms, the atmosphere of which proves fatal to so many that are cultivated in greenhouses. It is of easy propagation by division of the roots or by striking the crowns. The former is the quicker mode by which large plants are secured, and perhaps the more easy, but for useful decorative material in small pots the method of rooting the separate crowns will find most favour. They may also be raised from seeds.

It is only recently I have found how easily they may be rooted in water. The heads, no matter whether they are seed-bearing or not, if taken off and thrown into a tank of warm water will within a very short space of time form new growths and roots simultaneously. These shoots may be allowed to extend about an inch long previous to placing them into small 60-pots, which, when favoured with an intermediate temperature, not necessarily air-tight, roots and tops very soon become active. Heads that contain matured seeds may be treated as cuttings and placed at once into small pots; but germination is hastened in this case by their being kept air-tight.

Just now our plants are in active growth, and many of the older leafstalks assume a worn-out appearance consequent, presumably, on the energies of the plants being directed into other channels in the formation of new growths. These old beds make suitable material for increasing the stock, and if these are rooted now they will most likely make useful little plants by the early spring months for standing in small vases on the table. Probably the above remarks may help a correspondent to solve a difficulty with a variegated *Cyperus*, as it is said the leaves are turning brown. I should advise him to cut them off, and if warm water in a tank or tub is not to hand they may be placed in saucers of water and put on the hot-water pipes until rooted.

Rich soil in potting is not required, and for the variegated form it should be strictly avoided, for if this is applied the variegation will be replaced by its green or original colour, which is afterwards difficult to restore. Loam and sand should form the greater bulk in the compost prepared, but if of a heavy nature this might be corrected somewhat by the addition of a small quantity of peat or leaf mould.

Water they require frequently when the pots are full of roots, and in the green sort occasionally an application of liquid or artificial

manure may be given with benefit; but abstention must be practised with the variegated one, or the result will be similar to that produced by rich soil. Like many variegated plants starvation is required in bringing them up to the best standard of excellence, and this quality is still further assisted by their being restricted in root space.—W. S., *Frome*.



EVENTS OF THE WEEK.—The Shows have commenced in earnest, and in the present week a large number will be held. The principal announced are as follows:—November 8th, Crystal Palace; November 9th, Kettering; November 11th, St. Neots and Surrey; November 12th, the National Society's Show at the Royal Aquarium, Westminster, Kingston-on-Thames, Wells, and Exmouth; November 13th, Bournemouth, Torquay, and Croydon. Several of these are two-day shows.

— WE learn that the Lord Mayor of London, Alderman J. Whitehead, who has devoted so much attention to the fruit question recently, has been created a baronet. The following additions have been made to the Fruit Fund now being raised:—Mr. H. R. Williams has given £25, Mr. George Cutt £25, Sir William Ogg £25, Colonel North £25, and Mr. C. J. Leaf £10. The fund now amounts to about £1500.

— **EXHIBITIONS IN LONDON.**—We learn that a series of horticultural shows will be held in the Royal Aquarium, Westminster, next year under the direction of Mr. William Holmes of Hackney, at which liberal prizes will be offered for Forced Plants, Florists' Flowers, Hardy Plants, Bulbs, Fruit, and Vegetables. It is intended to hold a show in each of the following months—March, April, May, June, July, September, October, and November. The arrangements are not completed, but particulars of the special features at each exhibition will shortly be announced.

— In the report of KETTON HALL GARDENS, which appeared on page 101, reference was made to Mr. Hopwood's Orange-growing estate in Florida. Mr. W. H. Divers informs us that he is going for a few weeks to inspect that estate, and that his foreman, Mr. John Tunnington, will take full charge of the Ketton Hall Gardens during his absence.

— At the monthly meeting of the TEDDINGTON HORTICULTURAL DISCUSSION SOCIETY last week, Mr. E. H. Douët in the chair, the cultivation of the Tomato formed the subject of a profitable discussion. The initiative was taken by Mr. D. Anderson, the well-known nurseryman, and Secretary of the Society, and most of the members present had some useful experiences to relate and suggestions to offer concerning the successful growth of this important plant.

— **TRADE ANNOUNCEMENT.**—Under the title of the English Fruit and Rose Company (Limited) a company has been formed to purchase from Mr. J. Cranston the King's Acre Nurseries, Hereford, and to grow fruit, Roses, and other flowers for market. The capital is £30,000 in £1 shares, 20,000 being now issued.

— **A GOLDEN ROD WEDDING.**—An American correspondent sends an account of a recent event in Rhode Island, which is called a Golden Rod wedding, because the Golden Rod was used for decoration. "It was put everywhere, upstairs and down, on the steam radiators, the mantel-shelves were banked up to the ceiling, and no other flower was to be admitted except rich, many-coloured Asters, white ones being prominent in the arrangement. The bride stood in a large bay window under the arch, the whole resplendent with Golden Rod; a marriage bell of the same flowers hung above her head."

— **BERRY-BEARING PLANTS.**—Whilst the year is quite exceptional on account of the openness of the season thus far—and it is November—Dahlias, Asters, Sunflowers, and other gay garden graces are in all the freshness and richness of the early autumn; it seems also to have been an exceptionally good year for most of the ornamental berry-

bearing plants. Walking through Dickson's nurseries at Chester—and their grounds are bleak and exposed—one day last week I was much struck with the wonderful profusion of beautiful berries upon the Pernettyas in their ornamental garden. I have never seen their collection equalled, and the large border planted with shapely plants of the different hybrids was simply a mass of many coloured beautiful heads, and one of the most effective sights I have seen for some time past.—HORTUS.

— YOUR correspondent, "J. L.," may like to try the ZONAL PELARGONIUM MRS. LEAVERS, which I have found an excellent bedder, and the colour of the bloom, a beautiful bright rose pink, is very effective.—MATT. HODGTON, F.R.H.S.

— **CROSS FROM ROSA RUGOSA.**—M. Bruant, the French Rose grower, who is hybridising *Rosa rugosa*, and who originated the variety Madame Georges Bruant, a cross between a Tea and *R. rugosa*, has this season brought out another hybrid. The flowers are said to be large, semi-double, of a beautiful deep violet red, deliciously fragrant. The beautiful foliage of the type has been preserved in this variety, which has not yet been named.—S.

— **IRIS PARADOXA.**—The *Botanical Magazine* for October gives an illustration (tab. 7081) of the above named Iris, accompanied by the following remarks:—"This very curious Iris has long been known in cultivation, but is still very rare. It closely resembles its better known neighbour *Iris iberica* (*Bot. Mag.* tab. 5847) in habit, leaves, and the inner segments of the perianth, which in both species vary in colour from white to lilac; but the outer segments of the perianth are quite peculiar and different from that of any other Iris in being reduced to a mere tip and narrow margin to the diffusely bearded claw. All the species of the sub-genus *Oncocyclus* are restricted to the arid regions of Western Asia, one or other of them extending all the way from the borders of Egypt northward to the Caucasus. Our drawing was made from a plant flowered by Mr. R. I. Lynch at the Cambridge Botanical Gardens last May. It is also flowered at Kew at about the same time."

— **EUCHARISES**, "M.D." on page 349, refers to the subject of this favourite stove plant and its insidious enemy the mite, the existence of which he formerly doubted but now admits. He thinks it now the attendant on bad management. Does he, then, believe in spontaneous generation? Some of the best *Eucharises* in the kingdom are to be seen at Cardiff Castle—leaves 7 to 8 inches wide, proportionally long and exceptionally thick, and plants flowering continually. They could only have been produced and maintained in their present superb condition by the best of attention to cultural details. Yet the *Eucharis* mite has been an unwelcome visitor there—brought, undoubtedly, with purchased plants, which were eventually and wisely destroyed. "M. D." should see Mr. Pettigrew's plants as I have done, and he would be obliged to admit that reckless watering rendering them unhealthy is not the practice at Cardiff; if it were the plants could not have grown from babyhood to their present dimensions and remarkable vigour. I have just returned from Cardiff, and was impressed with the high class gardening there.—A LONDONER.

— **TOMATOES.**—Can any of your correspondents say what variety of Tomato is known as Lord Sudeley's? I saw several plants of this variety bearing a heavy crop of fine fruits recently, but there is more of a rosy violet shade of colour in it than in Perfection and many other sorts; it grows to a large size and is firm and heavy. I know that Lord Sudeley's fruit farms are very extensive, and presume this variety is largely cultivated there; but as many friends who have seen this variety would like to grow it, the question arises, Under what name is it to be obtained? Is it a seedling raised at Tuddington, or a known variety? I have seen many instances of Tomato growing this season, and in nearly every case they have been grown in shallow beds of not over-rich soil; in fact, in most cases, in good loams chiefly, with Thomson's or some other manure used during the growing season. Judging from my own experience I am sure it is a mistake to grow Tomatoes in rich soil, and feed them heavily, and an important point is gained by planting out sturdy short-jointed specimens instead of drawn up long-jointed ones.—SOLANUM.

— **LAURUSTINUSES IN POTS.**—A correspondent observes:—White flowers are always in demand at Christmas. It is not every season that *Laurustinus* flowers can be depended on outdoors in December and January, but plants in pots removed to a cool house before severe

weather will be sure to give a succession of bloom for a lengthened period. The plants are best established in pots, but we have frequently lifted neat little bushes in October and November, potted them in loamy moderately rich soil, placed them under a wall or fence protected from the sun for a few days. They are then removed to a cool house, watered well, and the foliage sprinkled occasionally, the reward being heads of bloom very useful for decoration and cutting from during the dull winter months. The best form is the pyramid, as taking up less room than bushes; but standards are fine for breaking the monotony of flat even surfaces. All the plants require is to be hardened after flowering, to be planted out in good soil in an open situation, but sheltered from winds, and to cut the heads into shape before growth takes place, watering well if dry weather prevail when planting out; and they may be lifted again in autumn, for the lifting appears to increase their floriferous character. The flowers are much finer and more delicate when produced under glass than outdoors.

— **THE STRAWBERRY.**—Our present varieties of Strawberries are the cultured products of the native and other species of *Fragaria*. Few fruits have been more improved by cross-breeding, selection, and evolution; and yet, so long as those processes were confined to native species, little was effected but an enlargement of size in Wood and Alpine Strawberries, or Hautbois. So early as the beginning of the sixteenth century we read of the former being developed to the size of Mulberries, a development unknown to modern cultivators of the same species. It was not, however, until the introduction of *Fragaria chiliensis*, *F. grandiflora*, and *F. virginica*, that our present families of Pine and Scarlet Strawberries began to be moulded into their present quality and form. Some of these can now also claim a very respectable antiquity. The Old Scarlet has been grown in its present form for two centuries; the *Roseberry* or *Gravesend Scarlet* for at least a hundred years. Keen's Seedling was raised in 1820, and thirty years later the *Black Prince*, *Elton Pine*, and *Myatt's Eleanor*, and many others still in cultivation—the near progenitors of such fine varieties as *British Queen*, *President*, and a host of others. Considering that white varieties have existed from the earliest times, it seems singular that so few have been or are cultivated. A *White Alpine* and the *White Carolina* were extensively grown, and have been improved out of the garden by the *Bicton Pine*, a delicious white variety, well worth cultivating. Possibly some of these may have infused some of their white blood into such delicately tinted sorts as *British Queen*, *Dr. Hogg*, &c. But good white Strawberries are rare, and can hardly be said to be popular. There is probably more money made in Strawberries than in any other hardy open-air fruit. As much as £20 profit per acre has frequently been cleared from Strawberries, and it is no uncommon thing to hear of an acre of Strawberries being worth £100. Though a perishable crop, if picked and packed with care it travels safely by rail, and the smaller fruit can be made into jam on the spot, or transported in tubs to the large preserving houses. Picked fruit gathered over-night, and delivered in London or other large towns by the milk trains, generally commands a price of 6d. or more per pound. Thoroughly preparing the ground, manuring and planting, costs about £20 per acre; but the crop may remain three or more years on the ground without any great additional expense, and it would be difficult to name any other fruit that will yield larger gross returns and such liberal profits. The forcing of Strawberries also opens up an almost new and a profitable industry. Ripe fruit in March commands prices varying from 6d. per ounce. In the Royal Gardens of Frogmore about 100,000 pots of Strawberries are forced annually, and some commercial growers probably double or treble these numbers.—(*Cassell's Popular Gardening*.)

A NOTE ON PINE APPLES.

WE have been cutting fruit of *Charlotte Rothschild* and *Smooth-leaved Cayenne*, but were not able to keep the temperature high enough, consequently the fruit, though juicy, was not of superior quality. It will not do at this time of the year to ripen the fruit in a lower temperature than 65°, if it ranges between that and 70° all the better. The utmost caution is required in watering. In careful hands liquid manure benefits Pines very much, but if injudiciously applied much damage results to the fruit. If the plants are freely supplied with liquid manure up to the time of the fruit colouring, in all probability it will be black at the core. It is absolutely necessary to leave off using stimulants about the time the fruit takes its second swelling. If the soil is moderately moist water must be withheld from the time the fruit shows signs of colouring. In our beds, where the pots are not far from the

pipes, there is more danger of the roots becoming dry than there is when they are plunged in deep beds of moist leaves where the heat is kept up by fermentation. Suckers that are just established in the small pots in which they were potted early in autumn or late in summer are kept in a temperature of 55°; they do not receive much water. They might be grown on a little faster if necessary, but usually we have not room to pot them until May.

We have heard a little of new Pines within the last two or three years, but it will be some time before anything will beat the sorts we have grown for many years. The most recent of ours is the *Charlotte Rothschild*, but all points considered, although a most noble fruit, it is not equal to *Smooth-leaved Cayenne*. It is generally understood that there is a good and a bad strain of the *Cayenne*. We have had the fruits decay before they were ripe, but this has generally happened in spring when fierce sun has scalded the fruit, coming suddenly upon it after the dull dark days of winter; we usually just lay a sheet of newspaper over the crown to protect the fruits from injury. Is it not possible that this weakness in the *Smooth-leaved Cayenne* has led people to believe that there are two varieties? The *Queen* holds the same position amongst Pines that *Black Hamburg* holds amongst Grapes, and it is even now more valuable owing to the fact that nearly all the *St. Michael's Pines* are *Cayennes*, and these being imported in quantity at certain seasons very much depreciate the value of home-grown fruit. Good *Queens* are not only valuable for home consumption, but they always command a high price in the market independent of any glut from abroad. If it is intended to pot any plants in February the soil for this purpose ought to be put in a dry place, as it will not be in good condition for potting if exposed to the wet during winter. Good, sound, moderately clayey loam from an old common where Brackens grow freely answers well for Pines.—A. B.

PLANTING BULBS AND TUBERS.

THE summer bedding plants have remained effective rather later than usual, and this will necessarily delay the work of refilling the beds. The sooner, however, the bulbs intended for the mixed or herbaceous borders and other sites they are to permanently occupy are planted the better it will be for many of them. Early planting does not materially affect the time of flowering, but those in early are invariably the most strongly rooted, and afford a superior display of bloom. *Narcissi* and *Daffodils* are most effective when planted in groups of one variety only, the bulbs being disposed not less than 5 inches apart and fully 6 inches deep. A good position for them would be the second or third line in a mixed border, and all should be properly labelled, both in order to preserve the names and also to protect the bulbs when the foliage has disappeared. *Irises* vary considerably in height, and these also should be set well back in a border, or say somewhere near the middle. These may be planted in groups, the bulbs being disposed 9 inches apart and not less than 4 inches in depth. A little sharp sand surrounding these and bulbs generally favours a strong root action.

Anemones, of which there are several beautiful and quite hardy tuberous species, succeed very well in either small beds, in small patches, or even among fruit trees and bushes. Arrange them 5 inches apart and cover with 3 inches of light sandy soil. The latter condition is especially necessary where the soil is of a heavy clayey nature, and in this case it is also wise to defer planting till January. *Ranunculuses* should in no case be trusted in the open ground before January or as early in February as the state of the soil permits. Patches of *Triteleia uniflora* are very pleasing in mixed borders. Plant these near the front row, 3 inches apart and 3 inches deep. *Musk Grape*, and *Feather Hyacinths* are also somewhat dwarf, and the bulbs of these may be either planted in lines or patches, rather thickly, and about 3 inches deep.

Scillas are attractive for the Alpine garden and the front rows of mixed borders. These should be planted somewhat thickly and about 3 inches deep. *Snowdrops* succeed admirably in turf, the foliage dying down before it is necessary to mow the grass. Plant in patches 2 inches below the surface. *Crocuses* are effective in the front rows, and should be planted in a broad band and fully 4 inches deep. The *Winter Aconite* is usually the first to flower, and this does well in any moderately dry position, including rockeries. It is of very dwarf habit and should be planted in patches and about 3 inches deep. *Dodecatheons* (*American Cowslips*) and *Erythroniums* (*Dog's-tooth Violets*) also succeed in rather dry positions and light peaty soil—the rockery being a good position for these tiny gems. *Leucojums* to be treated similarly to the *Feather Hyacinths*, and if *Ornithogalums* are planted now they must be protected from severe frosts, a mound of ashes answering

for this purpose. *Chionodoxa Lucilæ* much resembles *Scillas*, and requires similar treatment.

Plant *Belladonna Lilies* as soon as received nearly close to a very sunny wall, a narrow border near the front wall of a forcing house being a capital position. Dispose the bulbs 12 inches apart and 4 inches deep. *Alstroemerias* ought to have a sunny and rather dry position where they will seldom be disturbed, fine beds being sometimes seen at the foot of dwelling house walls. Plant in patches 8 inches below the surface. If *Tulips* and *Hyacinths* are planted in mixed borders they are most effective in clumps, being disposed from 6 inches to 8 inches apart and 4 inches below the surface. Now is also a good time to plant *Fritillarias* and *Crown Imperials*, these being suitable for the back rows in mixed borders. They are most effective in clumps. It is not yet too late to transplant or purchase the beautiful *Lilium candidum*, which also should be arranged in groups along the back rows in mixed borders. This moves best with a tuft of leaves and roots intact. Arrange the bulbs 9 inches apart and bury them well below the surface without actually smothering the foliage.—W. I. M.



CHRYSANTHEMUM SHOWS.

WE shall be obliged to the secretaries of societies and others interested in the matter if they will send us brief original notes on the shows where this Journal is not specially represented. Local newspaper reports are frequently sent during the season, of which we can make but little use. All that we require are the names of the winners in the chief classes, the names of the varieties in the leading stands, and the general character of the show.

CHRYSANTHEMUMS IN THE WEST.

I HAVE just had a run westwards, and found *Chrysanthemums* well grown in four gardens, but the blooms from the early crown buds were fading. At Talygarn, South Wales, the pleasant seat of G. T. Clark, Esq., Mr. W. Wright, the gardener, has an admirably grown collection, not surpassed probably in the principality. At Cardiff Castle Mr. Pettigrew grows them in the free conservatory bush form, and splendid bushes they are, with rich foliage down to the pots, and scores of blooms on a plant for cutting by the armful. At Marston House, Frome, Mr. W. Iggulden has an excellent collection bearing exhibition blooms, but most from the crown bud are too early for the shows, though some grand examples of *Jardin des Pantes* may perhaps "keep." *Thunberg* is also exceptionally fine. The blooms from terminal buds are smaller, but firm, fresh, clear and beautiful. In the well-managed town garden of Mr. Bailey, Willow Vale, Frome, is a small collection, bearing blooms of the first quality, *Avalanche* perhaps the best of many others that are very good, but most of them fading now. They are a credit to the grower, Mr. W. Strugnell, who is an old pupil of Mr. Iggulden, and undoubtedly an excellent gardener.—A LONDONER.

AROUND LONDON.

THE majority of the *Chrysanthemums* around the metropolis are unusually early this year, and the first shows seem at present likely to have the best of the exhibits. There are, however, a few exceptions in which the blooms are later, and about right for the midseason exhibitions. We can only refer briefly to a few of the chief collections. Of the public displays one of the first to be opened was that in the Inner Temple Gardens, under the charge of Mr. Newton. A house near the embankment is devoted to the plants, which are arranged on a sloping bank with a path in front; and in quality of blooms and brightness of effect it is one of the best shows seen at the Temple for a long time. Japanese varieties predominate, and amongst the earlier blooms were uncommonly good examples of Mrs. J. Wright and *Edouard Audiguier*.

At Finsbury Park a wonderfully good show is provided by Mr. Cochrane, the plants and blooms quite up to the high standard distinguishing those at this Park. The house is 100 feet long and 18 feet wide, with a central group sloping to the path on each side. This is a convenient arrangement, but the house is scarcely large enough to do justice to the plants, and the larger structure which is likely to be provided next year will be a welcome improvement. All the best varieties in the principal sections are admirably represented. At Victoria Park Mr. Gibson has a spacious and substantial span-roof house filled with *Chrysanthemums* in two groups, the path being in the centre; and there, curiously, though only a short distance from Finsbury Park, the plants are much later—nearly a fortnight—and will last until nearly the end of the month. They are all healthy, sturdy specimens, bearing good buds, and the blooms they have expanded are capital examples of their respective varieties. Southwark Park also has a *Chrysanthemum* Show, and Mr. Bush well maintains his reputation by a capital display. In Battersea Park, too, Mr. Copping has a houseful of excellent plants,

hearing substantial blooms thoroughly creditable to his cultural skill. Another year we may expect still more of these public displays, and we might suggest Myatt's Fields, Camberwell, now under the charge of Mr. Moorman, and the Fawcett Park at Vauxhall, being laid out by Mr. Holmes, as very suitable places for such shows.

At the Crystal Palace, Mr. W. G. Head, the garden superintendent, annually grows from 6000 to 7000 *Chrysanthemums* for decorative purposes, and he has the latter number this year. The early and October varieties are chiefly depended upon, but over 100 varieties are grown, the best in large quantities. Many more varieties were grown at one time, but they are being steadily reduced as their qualities have been tested, and a still more critical selection will be made for another year.

Mr. A. H. Smee, of The Grange, Carshalton, is a well-known admirer of the *Chrysanthemum*, annually providing a large display which is thrown open to the public for some days. The gardener, Mr. Cummins, grows about 600 plants, which are arranged in one of the houses and produce a capital effect, forming a bank of bright flowers. The collection of varieties is a large one, most of the best old and new forms being included.

Amongst the trade displays of *Chrysanthemums* the principal are those of Messrs. H. Cannell & Sons, Swanley, Messrs. Laing & Son, Forest Hill, Messrs. J. Veitch & Sons, Chelsea, Messrs. Davis & Jones, Camberwell, and Mr. G. Stevens at Putney, all of whom devote several houses to the plants, and include amongst the ordinary stock some novelties of considerable merit.

TWICKENHAM.

The garden at Poulett Lodge, Twickenham, abounds in specialties, for Mr. W. Bates is an earnest believer in the old maxim that "what is worth doing is worth doing well," and he carries out the idea admirably in all he undertakes. A large collection of outdoor fruits gives good evidence of the best treatment by the healthy and fine fruit-bearing condition of the trees. Under glass we find Peaches and Nectarines, Grapes and Vines, all equally well grown, and miscellaneous plants of decorative value receive a good share of attention with satisfactory results. Amongst the latter must be included the *Chrysanthemums*, of which moderate numbers are grown, but they are most promising, and excellent blooms are expanding both of Japanese and incurved. Deep, substantial, clean, handsome, incurved blooms are noticeable that would grace any show board, and the Japanese are represented by large richly coloured blooms. If Mr. Bates were to turn his attention to growing flowers for exhibition purposes he would prove a formidable antagonist to some of the "old stagers," and we may yet hope to see him in the front ranks at the leading shows, though not this season.

TEDDINGTON.

A delightful walk from Twickenham on a brilliant moonlight night, and The Roselands, Teddington, is reached, where Mr. W. Furze devotes a large portion of his garden and houses to his great favourites the *Chrysanthemums*. Unfortunately their enthusiastic owner was absent, but by the kindness of Mrs. Furze we were permitted to see as much of the plants and blooms as candlelight would admit. The inspection was a very gratifying one, for it is always a pleasure to see well grown plants, and the gardener, Mr. Coombs, has given close study to the *Chrysanthemum* for some years with the best results. "Ah!" said my companion, "they have a secret here which I have not yet mastered. They grow the plants up to a certain stage, and then they grow the blooms." The fact is the plants are in smaller pots than are usually seen, the wood has not the slightest tendency to grossness—quite the reverse. In some cases it even looks thin, but it is firm, well matured, and evidently contains all that is requisite. The blooms come clean and free from deformity, building up steadily and regularly until the time arrives for the preparation for the show. Certainly some of the incurved blooms will require very little artistic aid to render them fit for the boards. The Japanese also are fine, and we regret that the demands upon our space this week will not permit an enumeration of the varieties, and where all are so good it is difficult to give a restricted list.

Weir Bank, the residence of Mr. J. P. Chappell, is nearly opposite The Roselands, and the love of *Chrysanthemums* would seem to have extended there, together with the skill necessary for growing them well. At any rate, Mr. Davies has an excellent display, and it is evident he is making rapid progress in the art which puzzles my friend—namely, "growing the blooms." He has a good selection of varieties, which are represented in nearly every case by handsome blooms, both of Japanese and incurved. The plants are arranged in a conservatory to form a sloping bank, the colours are effectively disposed, and the group altogether is a charming one.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.

FEW novelties amongst *Chrysanthemums* have attracted so large a share of public attention as that named above, which was announced last year in the American papers, and made its appearance in this country during the present year. Elaborate descriptions were published, and the variety was proclaimed as the most remarkable ever obtained. It is almost needless to say that the accounts were received here with a certain amount of incredulosity; we always credit our American cousins with a tendency to exaggeration of the charms of their own possessions, and perhaps for that reason we are sometimes a little unjust in discounting their descriptions so severely. Some blooms were sent over here from the States, but they were not in good condition, and did

not serve materially to improve the reputation of the variety. Still nurserymen supplied themselves with a stock of young plants or cuttings as soon as they could be secured, and a member of the firm which

has been looked for quite anxiously, each grower trying his utmost to have the first blooms expanded. As announced last week, Mr. T. S. Ware of Tottenham has succeeded in accomplishing this task, and from



FIG. 47.—CHRYSANthemum, MRS. ALPHEUS HARDY.

sent it out came to England to act as agent, and, if necessary, to grow a stock of it. This looked as if they felt some confidence in its qualities, and so a good deal of curiosity was awakened here, and its flowering

a plant now flowering in the Hale Farm Nurseries, the illustration (fig. 47) was prepared.

The history of the variety may be briefly related as follows :—Mrs.

Alpheus Hardy is a well-known lady resident in Boston, who some time ago undertook the education of a young Japanese in America. When he was considered sufficiently advanced her protégé returned to Japan to engage in teaching, and as some return for the kindness he had received he obtained a collection of Chrysanthemums and forwarded them to his patroness. Amongst these was a variety that attracted some attention by its distinctness, and which first passed into the hands of Messrs. Fewkes & Son. This firm realised that they had secured a novelty of a very exceptional character, and when some other nurserymen wished to purchase it, they fixed a high value on the variety. After some negotiations, however, it is said that Messrs. Pitcher and Manda were induced to pay 1500 dollars, or somewhat over £300, for the stock. Every effort was made to increase this rapidly, and when distributed, young plants realised from 6s. to 10s. retail. Mr. T. S. Ware secured 500, which were soon multiplied, and several of these have produced flowers which expanded rapidly last week and are now at their best. It is somewhat strange that the majority of plants seem very late, and it had been expected by some in the trade that blooms would not be seen until after the show season; in fact it was believed to be a late variety. It is probable, however, that rapid propagation has somewhat weakened the plants, and that may account to some extent for the uncertainty characterising those grown this year; another season we shall expect very different results.

It will be asked, Do the blooms that have already opened possess all the characters ascribed to the variety when it was first announced? and the reply must be in the affirmative, for it is certainly one of the most distinct Japanese Chrysanthemums yet introduced. The blooms are of medium size, as might be expected on plants this year; the outer florets are half an inch broad and slightly spreading, but the majority are strongly incurved to the centre, thus exposing the under surface as in the ordinary incurved and the Japanese of a similar type. The colour is white, creamy yellow in the centre where not fully expanded, but that ultimately becomes white, as is seen in some more advanced blooms. The great peculiarity rests, however, in the abundant white hair-like outgrowths from the surface of the florets towards the points; these hairs are about a quarter of an inch long, very fine, in some cases divided at the tips, and thickly placed. In general appearance the bloom is very remarkable, and it has been rather aptly described in the American reports as resembling a white ostrich tip. The plant is of moderate growth, but produces suckers freely, and is readily increased. It has been remarked at Tottenham that the plant is not benefited by too generous treatment in the supply of manurial stimulants or by close disbudding. The best examples are those on a plant bearing six blooms, and where only one bloom has been left on each plant, liquid manure being employed freely to strengthen them, the results are not nearly so good. With sturdy cuttings for a start, however, it will be strange if some of our skilful exhibitors cannot produce extremely satisfactory results another season.—L. CASTLE.

AN AMATEUR'S CHRYSANTHEMUMS.

MR. G. R. PEERLESS, Park Hill House, Park Hill, Clapham, London, S.W., has a good display of Chrysanthemums in the conservatory attached to his residence. He has only been a grower for a very few years, but has got together an excellent collection of well grown plants. The greater part of his time is spent in business pursuits, but all his leisure is devoted to his favourite flowers, and to the deep interest and unremitting attention devoted to them may be ascribed his success. The plants grown number about 600, and with the best of the older varieties are associated most of the meritorious newer kinds. The queen of them all at the time of my recent visit was the lovely white Japanese Mrs. J. Wright, of which there were several finely developed blooms. It was too early to judge of the majority, but the following were all showing well:—Mr. H. Cannell, pale yellow Japanese; Stanstead White, Japanese; Sunflower, yellow Japanese; Duke of Berwick, creamy white Japanese; Avalanche, pure white Japanese; Charles Gibson, bronzy red incurved; M. J. Laing, reddish brown Japanese reflexed; Phœbus, rich yellow Japanese reflexed; W. G. Drover, white Japanese, striped lilac; Lady Trevor Lawrence, white Japanese, and E. Molyneux, reddish brown Japanese. The collection is not at its best yet. In due time it will be worth inspection by anyone.

CHRYSANTHEMUM SPORTS.

MESSRS. H. CANNELL & SONS, Swanley, send us blooms of the two sports from Mr. Bunn which were brought into notice last year, one in the north and the other in the south of England. The former, as represented by the bloom before us, has a deeper yellow ground colour, and more bronzy red tint in the upper surface of the florets; the other has a pale yellow ground colour, and somewhat of a dull rosy tinge on the florets. The difference is clearly noticeable, but the distinction is not great, and might be affected to some extent by the age of the blooms, one (the lighter of the two) being more advanced.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

ON Wednesday last, October 30th, a meeting of the Centenary Sub-Committee of the above Society was held at Anderton's Hotel, Fleet Street, at 6 P.M. Present—Mr. R. Dean in the chair, Mr. W. Holmes, Mr. Briscoe Ironsides, Mr. L. Castle, and Mr. C. H. Payne. The object of the meeting was to consider an offer of the Royal Aquarium Company with regard to the Centenary celebration, and to decide whether this should be recommended to the General Committee for adoption. Mr.

Holmes stated that he had had an interview with Captain Molesworth, and that he had agreed, on behalf of the Company, to contribute £200 to the prize fund for the Centenary Show next year, provided it was held at the Royal Aquarium, and was of not less than four days' duration. No further conditions were imposed, and the offer being considered a liberal one, it was, after a short discussion, decided to report to the General Committee the desirability of accepting it. Mr. Holmes also stated that it would really constitute one of a series of shows now being arranged, extending from March to November, 1890, omitting one month only—namely, August, special attractions being provided for each show.

A General Committee meeting was also held at 7 P.M., when there was a large attendance of members, Mr. E. Sanderson taking the chair. After the transaction of the usual formal business, the report of the Centenary Sub-Committee was read and explained, and after a short discussion was adopted unanimously. The cost of carriage of specimen plants for exhibition at the November Show was considered, and it was represented that it proved a great deterrent to exhibitors, as the prizes were comparatively small. It was ultimately resolved to empower the Hon. Sec. to pay half the cartage expenses in such classes as far as the funds would permit, provided the exhibits were of sufficient merit, and that application was made within seven days of the Show. It was also decided that classes should be provided at the October Show of 1890 for Chrysanthemums, and Mr. Holmes was desired to make the necessary arrangements for the annual dinner next December. It was stated that special return tickets for Hull, *via* York, could be obtained on application to the Hon. Sec., and if ten or more were likely to travel by the 10.35 A.M. G.N.R. train on Wednesday, November 20th, a saloon carriage would be provided. Several members were elected, and a vote of thanks to the Chairman concluded the business.

CHRYSANTHEMUM SHOWS.

WE have received schedules of the undermentioned Chrysanthemum Shows, and we shall be glad to insert the dates of any not included, if the secretaries will forward us schedules of their respective Societies.

Market Harborough, Wednesday and Thursday, Nov. 6th and 7th.

Kent County, Wednesday and Thursday, Nov. 6th and 7th.

Portsmouth, Wednesday, Thursday, and Friday, Nov. 6th, 7th, and 8th.

Crystal Palace, Friday and Saturday, Nov. 8th and 9th.

Kettering and District, Saturday, Nov. 9th.

St. Neots, Monday, Nov. 11th.

Surrey (Peckham Public Hall), Monday and Tuesday, Nov. 11th and 12th.

Leeds Paxton, Tuesday, Nov. 12th.

National Chrysanthemum Society (Royal Aquarium), Tuesday and Wednesday Nov. 12th and 13th.

Kingston and Surbiton, Tuesday and Wednesday, Nov. 12th and 13th.

Wells, Tuesday and Wednesday, Nov. 12th and 13th.

Exmouth, Tuesday, Nov. 12th.

Torquay, Wednesday, Nov. 13th.

Bromley, Wednesday and Thursday, Nov. 13th and 14th.

Croydon, Wednesday and Thursday, Nov. 13th and 14th.

Bournemouth, Wednesday and Thursday, Nov. 13th and 14th.

West Kent (Bexley Heath), Tuesday and Wednesday, Nov. 12th and 13th.

Teddington, Putney, Chiswick, Cranbrook, and Birkenhead, Thursday, Nov. 14th.

Leicester, Eccles, Wellington (Somerset), and Cheshunt, Friday, Nov. 15th.

Bolton and Derby, Friday and Saturday, Nov. 15th and 16th.

Twickenham, Winchester, Liverpool, and Cardiff, Tuesday and Wednesday, Nov. 19th and 20th.

Rugby and Birmingham, Wednesday and Thursday, Nov. 20th and 21st.

Falmouth, Wednesday, Thursday, and Friday, Nov. 20th, 21st, and 22nd.

Hull (National Society's Provincial Show), Thursday and Friday, Nov. 21st and 22nd.

Chorley and Stockport, Friday and Saturday, Nov. 22nd and 23rd.

Pontefract, Thursday, Nov. 28th.

PLANTING FRUIT TREES.

AUTUMN has come again. Another season of growth is almost ended. Soon will the latest fruits be gathered and the fast-decaying foliage fallen; then, and often only then, comes the fruit-tree planter's opportunity before the soil, saturated by a winter's rainfall, has become sodden and cold. Mark this well, for success or failure in planting depends as much upon the time as upon the manner in which it is done. A correspondent ("J. H.") would seem to be aware of this, for he has come to us now to assist him in finding a remedy, or rather a preventive, for the failure of fruit trees. He says, "Last year I planted in a marly soil a large quantity of fruit trees, and about half of them are dead," adding in the true national spirit, "I intend trying again." Well done. "Try again" is the motto which points to success, and gladly do we come to your aid.

Now there are two faults in a marly soil which require correction before it can become suitable for the growth of fruit, and these are its poverty and its power of retaining superabundant moisture. The remedy for the first is a heavy dressing of manure,

and for the second drainage and a plentiful supply of coarse gritty matter, such as road scrapings, coal ashes, shattered bricks or stone chippings thoroughly mixed with the marl and manure, our object being to open up the soil to the action of the air as well as to drain and enrich it. It is of course desirable to treat the whole of the soil in this manner; but as this is a costly process it is customary to prepare stations for the trees, and to improve the condition of the remainder subsequently. Each station should be 6 feet square and 2½ feet deep, the bottom 6 inches being filled with broken stones rammed hard, and the 2 feet above filled with the prepared soil.

Drains of common 2-inch pipes should be made 30 feet apart and 4 feet deep, taking care to connect every station by a branch drain with the main nearest to it; for when stations are prepared in clay, or any substance of a compact adhesive nature, if they are undrained they become just so many death traps for the roots, owing to the accumulation of stagnant water. In my own practice I am not content to make a branch drain to the side of the station, but continue it right across the bottom, laying the row of pipes upon the hard-rammed stone. As a general rule it may be taken for granted, that when the soil in which fruit trees grow rests upon a deep compact subsoil drains will do good, but when the soil is shallow and has a substratum of rock, chalk, or shattered stone immediately beneath it (a natural drain), then of course artificial drains are uncalled for, and would, indeed, prove injurious.

Let the planting be done in November, pruning off all bruised roots, and shortening all leading shoots to about 9 inches. Do not bury the roots deeply, but keep them within 6 inches of the surface, spreading every one of them out carefully to its utmost length, treading the soil so that none of the roots lie at all loose in it. Cover the entire surface of the station with 3 inches of rough half-decayed manure immediately after planting, and fasten the tree securely with wire and stumps so that it may never be swayed by the wind, for if the roots and stem become loosened in the soil the tree will not grow and there is much risk of its dying. Always plant quickly, or cover the roots with soil when you receive them from the nursery. The effect of exposing the roots to the air is so pernicious that many a tree has been lost through it. Take care that the manure mixed with the soil is old and quite decayed, or it may contain the spawn of fungi, which is also found in decaying wood and leaves, spreading thence over the roots of the tree and killing them.

Watch the trees carefully during the first season of growth after the planting. See that they do not suffer from drought. The surface-dressing of manure will act as a tolerable safeguard, but two or three thorough soakings of water or sewage are of material assistance to the growth and health of the tree in a dry season. See also that any fastenings of string or wire are loosened in time to prevent harm to the bark, which swells very fast upon a healthy strong-growing young tree.

Given healthy trees and due attention to these hints there ought not to be a single failure. Every point and detail mentioned is, however, of equal importance with the rest; and I must insist upon no negligence in any respect, for failures often arise from inattention to some matter apparently trivial in itself but of vital importance in its influence upon other things, and our correspondent will probably find that his lamentable failure was caused by inattention to some so-called trifle.—E.

SEASONABLE NOTES ON USEFUL PLANTS.

AMASONIA PUNICEA.

SOME care is needed not to check this plant in its present stage of growth. It must not have too much water at its roots, or they will perish, especially if the temperature in which it is grown is rather low. To do it well it should have a temperature of 65°, and if practicable a gentle bottom heat, which induces it to lengthen the brilliant crimson bracts and racemes of creamy white flowers. It grows freely during summer, but when growth is completed it is easily checked, and the flowers do not open well in a temperature that falls below 60°. It will do in this temperature, but where the higher one can be maintained all the better.

ANTHURIUM SCHERTZERIANUM.

Plants that have completed their growth should be removed from the stove to any structure where an intermediate temperature can be maintained. While in this position supply water carefully; in fact, it is desirable to keep the soil somewhat dry. The roots are very liable to decay if the compost about them is too wet while the temperature is low. Cold draughts must not be allowed to strike upon the plants. A few weeks' rest in a lower temperature is beneficial, and stove heat afterwards will soon bring them into flower. During the early months of the year few plants are more

serviceable in the stove for decoration; their scarlet spathes showing to great advantage.

ANTHURIUM ANDREANUM.

Strong plants raised in the spring, and in 6 and 7-inch pots, with a large spathe from each rising above other plants are conspicuous at this season. For associating with other plants in stoves that have to be kept attractive during the autumn and winter few plants are more effective or useful than this Anthurium. No sooner does one spathe disappear than another is produced. A few large plants for the centre of large houses are also very telling. There are many varieties, some of which are scarcely worth growing. The best plan is to select a good bright-coloured variety with large spathes, and grow it upright until it is 4 or 5 feet high, and then cut up the stem in spring. One good bud is only needed for each plant—that is, portions of stem with about two joints. The old stool will break freely again from the base.

CLERODENDRON FALLAX.

The earliest plants that were raised from seed will quickly come into flower if they are given stove heat—in fact, these plants will soon go back in a lower temperature than 60°. When the plants come into flower select one, and place it in the dryest position that can be found for yielding seed. The chief reason why the flowers do not set freely when the plants are grown in the stove is because the atmosphere is too moist.

APHELANDRA AURANTIACA ROEHLI.

Some of the most forward plants are coming into flower, and as these are much better raised from seed than cuttings, and grow with greater freedom, a few plants should be selected for seed-bearing. These must be placed on a shelf, or where the atmosphere is a little dryer than in the stove. Under these conditions they produce seed freely, but when the seed is ripening it should be collected daily, because it is soon distributed about the house. Plants that flower about February generally bear seed better than those that come into flower now. From plants flowering at that period we have lifted large quantities of young plants that have sprung up in the gravel and by the side of the walks. It is not safe, however, to rely upon a stock of plants being raised from self-sown seed.

CALADIUM ARGYRITES.

The leaves of this small-growing Caladium are always useful for associating with flowers. The tubers of a few of the plants that ripened early may be started into growth in brisk heat. The tubers should be placed singly in small pots, and plunged in brisk bottom heat. If grown only for their foliage a number of tubers may be placed in 5-inch pots. They start quicker and better in small pots with only a small quantity of soil about them.

CYPERUS DISTANS.

Strong plants in 5-inch pots raised from seed in spring and now in an intermediate temperature may be brought forward in succession by introducing a few into a temperature of 65°. Where furnishing is done on a large scale few plants are more useful. They are easily grown, and will bear cool house treatment until the end of October—in fact, they will do very well through the winter in a house that does not fall below 45° to 50°. Strong plants grow quickly in heat, but care should be taken to harden them before they are used in rooms and other similar positions.—B. N. G.

HORSERADISH CULTURE.

FOR the last two years I have practised the following annual routine of culture with Horseradish, and find it succeed perfectly. As soon as the leaves are off the plants in October or November we take out a trench at one end of the bed, as is usual in ordinary trenching, and by means of fork and spade turn over the whole of the bed down to the clay, carefully picking out the roots as whole as possible, and manuring as the process goes on. The bed is then made level ready for replanting. The roots are next looked over; all that is fit for kitchen use are dressed and laid aside for that purpose, and all the long thin roots of the thickness of a quill stripped of all side roots are laid in bundles for replanting. With a long dibber (or an ordinary Dahlia stick will do), make holes 18 inches or 2 feet deep, 6 inches apart, and 1 foot between the rows. Into each of these holes we drop one of these long roots, and then fill the hole up with fine dry soil from under the potting bench. These make good useable roots the first season, but of course if they were left for two seasons they would be much better. This annual planting has many advantages. In the first place, a very small bed will grow sufficient for the supply of most families. This struck me forcibly on entering a very old kitchen garden a few months ago, where was to be seen a bed of

Horseradish some 15 yards long by 5 or 6 wide, which apparently had not been disturbed, except in digging roots for use, for fifteen or twenty years. In contrast to this we have dug from a bed 15 feet by 8 sufficient good roots to supply an ordinary family for twelve months. In the second place, the ground is being cultivated. It is annually improving; and the plants being in rows, it can be kept clean by means of hoeing, the same as any other crops, instead of becoming a nest of weeds, as is too often the case; for it is no uncommon thing to find weeds seeding in the Horseradish bed in gardens where they would not be tolerated anywhere else. In the third place, there is no such thing as shouldering a pick when grim Jack Frost resists the spade in the gloomy winter months. The roots are laid regularly in layers one above another with soil between, and covered with soil. A little litter keeps out frost and mice. It is always accessible without the aid of either pick or spade. Would anyone who is acquainted with the system practised by those who grow it for the market favour us with an outline of their mode of producing the fine clean roots which they send to market?—R. P.

GREENHOUSE PLANTS.

HERBACEOUS CALCEOLARIAS.

CALCEOLARIAS are growing rapidly, as it is during the cool and moist months of autumn that they make good progress. Our plants are still in cold frames, and we are thinking of removing them to a cool brick pit facing south, where they will remain as long as the mild weather lasts. We have no set time for repotting, as it can be done at any time right through the winter. The principal point is to guard against the plants becoming root-bound. When the plants are grown on so that they are ready for their largest pots in October or November they get checked in growth. A cool greenhouse is the best place to winter the plants in. Keep them near the glass, and take care not to expose them to cold draughts or an arid atmosphere. Green fly is the most troublesome pest the Calceolaria has to contend with, so the house or pit should be fumigated every fortnight. So far our plants have not needed fumigating, but when removed to their winter quarters it will not be delayed, as prevention is better than cure.

DOUBLE PRIMULAS.

The earliest flowers are now unfolding in a pit where the night temperature ranges about 55°. Careful watering is necessary, and the plants must also be exposed to direct light, when these useful plants will well repay the cultivator for their trouble. Too much cannot be said in praise of these useful winter-flowering plants. Where "buttonholes" are in daily demand these are the plants to grow. The old Double White and its fimbriated variety, with Marchioness of Exeter, Miss Eva Fish, and Carminata, are the varieties we find the most useful.

CINERARIAS.

These should not be allowed to remain in cold frames any longer, as the foliage is apt to suffer from damp. A cool greenhouse or pit is the best place to winter them in. Cold draughts through side ventilators must be guarded against, as this is apt to cause the foliage to curl. Insects must also be kept in check with slight periodical fumigation. If the main plants are in their largest pots by the end of January it will not be too late, as we find those late potted keep their lower foliage well. But they must not be allowed to become root-bound upon any consideration before being placed in their largest pots, as this will not prevent their sending up a spindly flower stem. Too rich soil and loose potting must be guarded against, as they cause large flabby foliage, and the plants collapse with the least exposure to sun. Four parts of turfy loam, one part each of leaf soil and decayed cow manure with a little sand, we find a suitable compost both for the Cineraria and herbaceous Calceolaria.—A. YOUNG.

PLANTING YOUNG VINES.

HAVING read Mr. Bardney's remarks on planting young Vines without disturbing the balls or disentangling the roots, I was afraid we had done entirely wrong, as we had just planted two new vineries here (or about that time). I will now state how we performed the planting, and will then leave it for the readers of the Journal to decide which way is the better.

We planted the Vines on February 19th of the present year. The canes having been previously cut down to 9 inches long they were turned out of the pot, and all the soil shaken from them. The roots were then disentangled and spread out evenly in the new soil, and covered over in the usual way. They then received a gentle watering, and afterwards started gradually into growth, increasing the temperature as the season advanced, nothing being done whatever to force them

on too fast, a stout sturdy growth being aimed at. Air and water was given when found necessary, and now we have well ripened canes 23 feet long and 2 inches in circumference, nearly to the extremity of the canes.—J. L. H.

DRIVES AND WALKS.

It has been said that it is far better that no approach or other drive should cross the lawn in front of a country house. But of course the arrangement which is ideally best cannot always be made. In many cases where the road can be kept away from the immediate vicinity of the house front, it will have to pass it at a greater distance. The road may then be masked by low plantations, which will, at least, be less disagreeable to the eye than the line of gravel. But plantations will often be undesirable as obstructions in what ought to be a simple extended view, or a broadly treated landscape. It is better, when possible, to sink the road, or to raise the lawn in a gentle slope towards it to such a degree that the eye will not perceive it, so that the stretches of lawn on its hither and further sides will seem to unite without a break.

If the place is so large that the house is not seen until after one has entered the approach road, attention should be paid to the first view thus afforded. There is much in initial impressions, and a house may never redeem itself wholly in a visitor's eyes if it fails to do itself justice when they first light upon it.

With regard to walks, the same general principles hold as with regard to drives. There should be no more of them than are needful; they should neither be so straight as to lack beauty nor so meandering as to lack ordinary directness, and they should be as narrow as convenience will permit, for gravel streaks are not charming objects in themselves, and the greater their breadth the more they decrease the apparent size of the place. They should not be so narrow that two persons cannot pass with comfort, except in retired situations, where pedestrians will certainly be few; but anything in excess of this should be studiously avoided. A walk 6 feet wide, where one of three would have sufficed, will dwarf its surroundings to a much greater degree than most owners realise.

A lawn can be injured almost as much by foot-paths as by drives when they cut across it. A properly kept lawn is as delightful to walk upon as to look at, and, in our dry summers, the days are few when it will be too wet even for a lady's shoe. Of course there may be cases when some distant object—a summer house that is constantly used, a boat house, or tennis court—will so constantly attract the feet that, unless a walk be provided, a ragged path will be worn across the grass. Then, a made walk is naturally better, for anything is better than a look of untidiness and neglect in grounds which ought to be carefully kept. But it should, if possible, be carried around the lawn, and, if this is not possible, its presence should be accepted as a disagreeable necessity.

Paths should never be made across a lawn simply to give access to flower beds, for the flower beds themselves have no business there. A lawn is a place for grass. Its object, whether it be large or small, is to afford a simple sheet of verdure to delight the eye with its reposeful breadth, and to supply a proper foreground for the plantations beyond it. To spot bright beds about is to ruin its peacefulness and its unity. There are thousands of country places in America, from large estates to suburban villas, which would be immeasurably improved could all the flower beds on the lawn, all the fountains and vases, and all the paths—leading nowhere but back to the house again—be once and for all turfed over. Flowers can usually be introduced in sufficient quantities in other ways—scattered among the shrubberies, or arranged in massed beds behind the house or in borders disassociated from the lawn. Or, if they are the prime consideration, and the place is not large enough for a lawn and a flower garden both, it is better to give up the lawn altogether and arrange in front of the house an old-fashioned garden, with as many beds and walks and Box hedges as the space will allow. Such a design is consistent and sensible, and may be made very pretty, while the more common device of trying to unite a lawn and a flower garden is illogical, and can never result in anything but an artistic monstrosity.

If there is a lawn, large or small, care should be taken that no walk, as well as no drive, runs between it and the house. Let the grass come up to the house foundations, and unite the two by planting a few Vines and shrubs. Then the house and its site will be connected and harmonised; the walls will seem to spring from the soil almost like a natural growth, and the picture seen from the lawn will be as charming as that which the lawn presents when seen from the house. Whether there are mere doorsteps, or a porch, or a piazza, no path is needed, for this entrance should be used only by those who wish to stroll upon the lawn or to cross it to some spot not otherwise accessible. And even on those sides of the house where a path is needed it should not be allowed to run close to the walls. Sufficient space should be reserved for planting against the walls, and thus, if the further side of the path is properly planted too, from a little distance the eye will see only the masses of verdure which connect the house with the landscape about it.

Although curving roads and walks are best in a place of any size, straight ones should usually be preferred in a small villa lot. Then every inch of space is valuable, and of course a straight path occupies less ground than a winding one. The straight lines formed by the house and the street cannot be for a moment forgotten, and it is, therefore, good art to accept them as the basis of the whole scheme and make the paths within the gates correspond with them. Then, too, there should be no drive at all unless there be a stable behind the house. In this case it is best to leave the front free and

carry the road in at the end of the lot to a door in the side of the house whence it may continue to the stable yard. Place for a lawn is thus reserved in front, and the line of gravel will be least conspicuous from the principal windows. But it is better, when there is no stable, to sacrifice comfort a little in the interests of beauty—to leave the carriage in the street and let but a narrow pathway approach the house. The sacrifice will be a small one, and the gain in the aspect of the place as a whole may easily be great.

The suggestions have not been made with the idea of making "every man his own landscape gardener." On the contrary, they have been written to show how many things must be considered in the building of the simplest country house, or the designing of the smallest place; and how desirable it is, therefore, that the aid of an artist should be called in at the outset.—(*The American "Garden and Forest."*)



ROSES OF THE FUTURE.

Now that the Rose catalogues are mostly sent out it may be interesting to have indicated some of their promises for the future. Mr. George Paul announces Dowager Duchess of Marlborough for May, 1890, his prize seedling of 1888, old Auguste Mie, but perfected. The globular shape of that old friend was very admirable, and might be revived with advantage. There are also three of German raising brought forward, all apparently descended from the Gloire de Dijon, of which Progress seems the most remarkable, with Gloire de Dijon leaves, bright carmine.

The others, Kaiser and Kaiserin Frederick, are more yellow with a reddish tinge. His J. D. Pawle of 1889 has already made its mark. Rich velvety crimson with maroon shading is its description. Mr. Bennett's Cleopatra had a first-class certificate in 1887. Somewhat after the style of Elise Vardon is perhaps as high commendation as a Tea could have. It would appear a worthy addition to Princess of Wales, Her Majesty, Lady M. Fitzwilliam, and others of his, which stepped at once into the very front rank of exhibiting Roses. Mr. Bennett offers Maid of the Mist, a sport from Lady M. Fitzwilliam. Mr. G. Paul has already given us a similar sport—i.e., Lady Alice.

White Roses appear in the ascendancy, and we can hardly have too many of such high class varieties. We have also Mr. Prince's new white Souvenir de S. A. Prince, and White Perle, offered by Messrs. Curtis and Sanford, an American sport from that admirable yellow Tea Perle des Jardins. Messrs. Mack & Son are able to tell of the triumphs of their Sir Rowland Hill, the darkest Rose in existence. They also recommend Earl of Dufferin, to my mind one of the very best and largest of our new Roses; rich velvety crimson, shaded with dark maroon. Strange to say it would have been in former years, but nowadays in French Roses there is nothing that comes very prominently forward. The various Rose catalogues are admirably compiled, and present interesting and instructive reading, besides many temptations, but of all I must confess to a leaning towards one from the West, perhaps because of the charming Rose portraits with which it is embellished.—A. C.

THOMAS'S PHOSPHATE.

WILL some kind horticulturist inform me whether he has ever used Thomas's phosphate in the cultivation of Roses especially, in what quantity he applied it, and at what time, autumn or spring, and how; whether as a top-dressing or dug in, and with what result?—RUSTICUS.

NAMING FRUITS AND VEGETABLES.

Now that nomenclature is attracting attention the following report may possess some interest.

The Association of American Agricultural Colleges and Experiment Stations at its Knoxville meeting in January, 1889, appointed a Committee to devise methods for co-operative work in horticulture, and especially in testing new varieties of fruits and vegetables. This Committee called a meeting of station horticulturists at Columbus, Ohio, in June, 1889, for consultation. At this meeting a committee on the nomenclature of vegetables was appointed. The report and rules for nomenclature formulated are as follows:—

REPORT.—The Committee believe that all interests will be subserved and that dignity will be secured by simplicity and good taste in the nomenclature of kitchen-garden vegetables. To this end they have formulated a series of rules on the naming of vegetables by authority from the Convention of Horticulturists of the Experiment Stations held in Columbus, Ohio, on the 13th and 14th of June last.

Reform in this department of horticultural nomenclature should be prosecuted as vigorously and successfully as it has been in the nomenclature of fruits at the hands of the American Pomological Society. The Committee are confident that brevity, accuracy, and good taste in the naming of vegetables are perfectly compatible with the purposes of trade, and therefore solicit co-operation in this work not only from all

writers upon horticultural topics, but also from all dealers in garden seeds and supplies.

A name is bestowed upon any plant solely for the purpose of designating it. It is not the province of a name to describe the plant. All description is properly a part of the text. This description should present a characterisation of the variety rather than a mere list of adjectives intended to catch the eye. The Committee desires to suggest that a variety never be described under a name which is accepted as a synonym. If the synonym is used as a leader, it should stand only for the purpose of making a reference to the proper name; as, Ivory Ball. See White Apple.

RULES.—1. The name of a variety should consist of a single word, or at most of two words. A phrase, descriptive or otherwise, is never allowable, as Pride of Italy, King of Mammoths, Earliest of All.

2. The name should not be superlative or bombastic. In particular all such epithets as New, Large, Giant, Fine, Selected, Improved, and the like should be omitted. If the grower or dealer has a superior stock of a variety, the fact should be stated in the description immediately after the name rather than as a part of the name itself; as, "Trophy, selected stock."

3. If a grower or dealer has procured a new select strain of a well-known variety it shall be legitimate for him to use his own name in connection with the established name of the variety; as, Smith's Winningstadt, Jones's Cardinal.

4. When personal names are given to varieties titles should be omitted; as, Major, General, Queen.

5. The term hybrid should be used except in those rare instances in which the variety is known to be of hybrid origin.

[A hybrid is the product of true species. There are few, if any, instances of true hybrids among common garden vegetables. The union of varieties gives rise to a cross.]

6. The originator has the prior right to name the variety, but the oldest name which conforms to these rules should be adopted.

7. This Committee reserve the right in their own publications to revise objectionable names in conformity with these rules.

CULTURE OF ERYTHRINA CRISTA-GALLI.

THIS, "the Coral Plant," introduced over a century back, is now but seldom seen, except in the large gardens of places of some note. Few plants are more accommodating. It may be flowered either as an early stove or late greenhouse plant on a conservatory wall, or even in a warm open border with a little care. It may be had in bloom early in spring by placing a plant in the stove not later than Christmas, and a succession may be kept up by starting at intervals. In the greenhouse, if kept rather close when beginning to grow, the plants will bloom freely about midsummer, while if started in a common hotbed in March, and then gradually hardened off, they will bloom in May and June.

It is best to commence with young plants, and give liberal treatment to encourage luxuriant growth, for the stronger the growth and the finer the foliage the stronger will be the crown of the plant, and consequently the more vigorous the supply of shoots. In the following season the plants should have large shifts, and a free supply of liquid manure, with plenty of drainage. The most suitable compost I have always found to consist of three parts fibrous peat, two of fibrous loam, and one part a mixture in equal quantities of leaf mould, well-decayed sheep-dung, and silver sand.

A gentle bottom heat is very useful in obtaining a good supply of roots. The temperature of the house need not be more than about 60°. When the plants have made some progress let air be given to prevent the shoots being drawn up, and give them a good syringing every evening. Erythrina is one of the finest plants I have ever grown against a conservatory wall, where it flowers beautifully. If grown in the flower garden, the best plan is to take the plants up at the end of autumn, keeping them out of the reach of frost, and nearly dry till spring.—G.

THE CANNON STREET DINNER.

BEING an old Oddfellow, and anxious to get as many as I could to our annual dinner in June last, I had to promise in one case that I would in return go to the United Horticultural Benefit Society's annual dinner. Now not being a gardener I did not look forward to the 23rd of October with any great amount of interest, and it took some little coaxing for me to make a start on that afternoon. But to my delight on reaching Cannon Street Hotel I found that the large hall devoted to the gardeners' feast could seat comfortably 150 persons, the tables all decorated with vases, epergnes, and the choicest of table plants, some thousands of plants being used in its adornment, with about 100 dishes of splendid fruits, groups of specimen plants in the corners, making the whole room look like a veritable fairyland.

At the appointed time, half-past five, the jolly gardeners and friends began to arrive, and then you could see by the friendly greetings and handshakings the true meaning of their motto, "Union is strength." At six o'clock the dinner was served in splendid style, and followed by a grand programme of songs and toasts and plenty of fruit. The time seemed to slip along too quickly, and brought one of the most enjoyable evenings to a close anyone could possibly wish for. I should say proud is the man who belongs to such a Society, thus making a provision for times of sickness and distress, and having the pleasure once a year, (members living within fifty miles of London), of coming up in rare form.

to celebrate its annual dinner, a meeting to be remembered by every one who had the pleasure of being present.

In the course of the speeches I noticed two grand points of the Society—viz., that should a member be unable to keep up his subscription of 6d. or 9d. per week, what he has paid is not lost, but at his decease or on attaining an old age he has what is due to him. Another thing, should any honorary member paying one guinea a year or more unfortunately get into straitened circumstances he is helped from the Society, and as we never know what the future may bring forth I consider that a grand provision. I was very pleased to hear that over twenty friends gave their names to become honorary members. It was said during the evening that of the 300 members on the books not one was on the sick list, speaking well for the gardener's occupation, and indeed judging by the splendid flowers and fruit displayed it must be a very pleasant work as well. One of the Committee invited any member to attend their meetings held at the Caledonian Hotel on the second Monday in each month to see the way in which they conduct their business. Their dinner arrangements were certainly carried out in a perfect manner, and great credit is due to them.

The chairman spoke of a convalescent scheme, which would be a grand thing if in accordance with the rules, and he promised a donation of £25 to form a nucleus of such a fund, which all must consider a very handsome act on the part of the worthy gentleman who occupied the chair. I should say that it will not be long before every gardener under the age of forty-five will avail himself of such a society, and instead of 300 we shall see 3000 members, the only qualification being a doctor's certificate of good health, with age and address, forwarded to the Secretary, 9, Martindale Road, Balham, at the next meeting they are proposed and seconded, and become members of this excellent body of men, banded together for mutual good. I hope I have not taken up too much of your valuable space.—A WELL WISHER.

LEAD CAPPED GLAZING.

VARIOUS methods of glazing without putty have been devised from time to time, and amongst them the plan of Mr. T. Page of Banbury

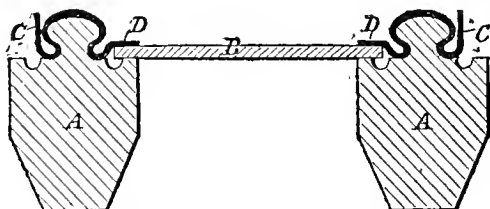


FIG. 48.—LEAD CAPPED GLAZING.

is worthy of being placed before our readers. The annexed illustration will render the method plain to all. A A is section of the bars, either of wood or iron; B shows section of the glass between two adjacent bars; and C D, C D that of lead capping; at C illustrating the flange turned up to receive the glass, and at D the lead turned down on the glass to secure it. Any section of bars can be used, either in wood, iron, or other metal. The lead being self-sustaining when rolled on to the bars, without the use of nails to fix the same, enables iron to be used as easily as wood. The glass can be quickly inserted, and is said to be held firmly against wind and will not slip.

THE SOURCES OF THE NITROGEN OF VEGETATION.

(Continued from page 385.)

THE authors in conclusion point out that, since experimenting in free air instead of in closed vessels, as in Boussingault's and their own researches, has become common, there has been a great accumulation of evidence tending to indicate the fixation of free nitrogen. The modes of explanation of the gain of nitrogen are: that it has been absorbed from the air, either by the soil or by the plant; that there is fixation of free nitrogen within the soil by the agency of porous and alkaline bodies; that there is fixation in the soil by the agency of electricity; that there is fixation by the plant itself; that there is fixation under the influence of micro-organisms within the soil. The balance of recorded evidence is undoubtedly in favour of the last-mentioned mode of explanation. "Indeed, it seems to us," say Lawes and Gilbert, "that, if there be not experimental error, there is fixation of nitrogen within the soil, under the influence of micro-organisms, or other low forms of life." But they think that final judgment must be held in abeyance for the present. Most of their own and Boussingault's previous experiments excluded, by their conditions, the action of electricity or of micro-organisms.

They then consider some of the facts of agricultural production in their bearing on the question as to how far the establishment of the reality of the fixation of free nitrogen is necessary to the solution of problems of agricultural production. They point out that the loss of nitrogen in ordinary farm practice is not so great as Berthelot and others have assumed; the annual loss of nitrogen by cropping in Great Britain, for example, is probably under 20 lbs. per acre. The loss by drainage may in some cases be considerable, and in special cases there may be loss by evolution of free nitrogen. Probably the loss of free nitrogen from the plant itself during growth, which is assumed by some

does not occur. The accumulation of combined nitrogen which occurs in the surface soil of pastures is not conclusively explained, but it may have a subsoil origin, and this assumption has as much evidence in its favour as that it has an atmospheric origin. In the soil and subsoil of Rothamsted, to a depth reached by the deeper-rooting plants, there is 20,000 lbs. of combined nitrogen per acre; in very many of the soils of this country there is more, though in some less than this: the accumulation of nitrogen in the surface soil may well be due to nitrogenous crop-residue, the nitrogen of which comes principally from the subsoil. Again, the natural fertility of most soils is without doubt due to the accumulation of ages of natural vegetation with little or no removal; and the amount of nitrogen even now brought into combination under the influence of electricity, over a given area, would be sufficient, with growth and little or no removal, to account for the accumulations in natural prairie or forest lands even of the richest.

The Rothamsted experiments have shown that after growing crops for many years without nitrogenous manures there has always been a diminution of nitrogen in the top soil; this has been found to be the case with diverse crops, including gramineous, cruciferous, chenopodiaceous, and also leguminous crops, and with a four-course rotation of crops. There has not been compensation of nitrogen from the air, or at all events to the extent of the annual losses. "The agricultural production of the present age is, in fact, as far as its nitrogen is concerned, mainly dependent on previous accumulations; and as in the case of the use of coal for fuel there is not coincident and corresponding restoration, so in that of the use or waste of the combined nitrogen of the soil, there is not evidence of the coincident and corresponding restoration of nitrogen from the free to the combined state."

CHRYSANTHEMUM SHOWS.

CHRYSANTHEMUM CENTENARY CONFERENCE AND EXHIBITION AT CHISWICK.—NOV. 5TH AND 6TH.

ENOUGH has perhaps been said in preliminary announcements of the Chrysanthemum Centenary at Chiswick to indicate its character and objects fully, but as these were tersely summarised in the schedule it may be well to recapitulate them. "The object of the Conference is to get together as large and as representative a collection of Chrysanthemums of all descriptions as possible; to form an exhibition of all subjects pertaining to the Chrysanthemum, whether in its botanical, its horticultural, its literary, or its artistic aspects; and to bring together for the purposes of reciprocal information and fellowship all those interested in the Chrysanthemum and its culture." The Society were, in fact, following the plan of the Rose Conference held in summer in endeavouring to find something of interest for all Chrysanthemum lovers, growers and non-growers; those interested in this section or in that, or in no section at all. The Chairman of the Committee was Mr. T. B. Haywood of Reigate; the Secretary, Mr. E. Molyneux, Bishops Waltham, both men of influence in the Chrysanthemum world. The schedule had been arranged in a very comprehensive manner, and nothing that forethought could provide was wanting to make the Conference a great success. Bearing this in mind, it was satisfactory to note that the gathering was a really successful and interesting one. Competition was lacking with specimen plants, but the groups formed a grand feature, nearly filling the large vinery, and the side stages were well filled with cut blooms. Altogether they presented a splendid display, seen at their best under the lofty Vine-clad roof, and with a brilliant sun shining down upon them.

Turning to a consideration of the exhibits, it may be noted that although the absence of specimen plants marred the completeness of the Exhibition in one point of view they were not much missed, as few could regret the absence of formally trained specimens when inspecting the free and beautiful grouping of decorative plants. The groups were without doubt a most striking feature of the Exhibition. The first to be observed on entering the conservatory was that from Mr. Turner, Royal Nurseries, Slough. It was not large, but well arranged, and presented an effective appearance. The plants were in good condition, with foliage well down to the pots. Mr. G. Stevens, St. John's Nursery, Putney, London, S.W., had a larger collection, in which Pompons were freely—perhaps too freely—employed; the back Japanese and incurved included some fine blooms. Baron Schröder, The Dell, Staines (gardener, Mr. H. Ballantine), had taller plants bearing larger blooms, more noteworthy for the quality of the flowers than the general effect of the group. Elaine, Avalanche, Middle. Lacroix, Madame J. Laing, Bonnington, and Criterion were finely shown amongst others. A group exclusively composed of Japanese came from the Royal Horticultural Society's Gardens, and showed the free, graceful character of this beautiful section. Messrs. W. Fromow & Sons, Sutton Court Nursery, Chiswick, had a loosely arranged group not quite up to their best standard, and perhaps marred by a fear of overcrowding carried to extremes. Freely branched, well-flowered plants, irregularly arranged, represented the Royal Gardens, Kew, and the remaining groups comprised separate collections of incurved, Pompon, Anemone, single, reflexed, and Japanese reflexed from the Society's Gardens, all tastefully arranged and presenting a very bright and cheerful effect.

Collectively considered the cut flowers formed a splendid feature, covering the side stages all round the huge vinery. Far the most interesting class was that for flowers of all sections, not more than three blooms of any large variety in a bunch. Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, had a splendid collection, reflecting the utmost credit on him. Amongst the incurved were

medium sized, beautifully finished blooms of Empress of India, Lord Alcester, Miss M. A. Haggas, Jeanne d'Arc, Princess of Wales, Violet Tomlin, and Golden Queen of England, but all were admirable flowers, and formed a capital stand. The reflexed were also extremely fine, King of the Crimson and the Christines, also Phidias and Cullingfordi, were excellent. Amongst the large Anemone flowered Fleur de Marie, Glück, Grand d'Alveole, Mdle. Cabrol, and Nelson were extremely good. The Japanese were best represented by Etoile de Lyon, Mdle. Lacroix, Avalanche, Edwin Molyneux, and Condor. Pompons and Anemone Pompons were a neat and pleasing display, and the singles were very bright, White Perfection, Mary Anderson, Admiral Sir T. Symonds, and Mrs. Le Moutt being particularly attractive. Messrs. J. Laing and Sons, Forest Hill, London, S.E., had stands of Japanese, incurved and reflexed, in good condition, the first named including a grand bloom of Etoile de Lyon. Mr. R. Owen, Castle Hill, Maidenhead, arranged his flowers in bunches in large receptacles instead of on stands. The formed a very free, bright, and fresh display, including Japanese in great variety, Pompons and singles also being extensively employed. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, had several stands of remarkably neat blooms. Amongst the Japanese Jeanne Délaux, Sunflower, Mons. Astorg, Fimbriatum, and L'Adorable were very noteworthy. The incurved were small but admirably finished. The Anemone flowered were a beautiful display. R. Owen, pure snow white, was extremely beautiful, surpassing Lady Margaret and Fleur de Marie. J. Thorpe, jun., and Mrs. A. Lowe were also very good. Messrs. H. Cannell & Sons, Swanley, Kent, had a very extensive collection, comprising no less than 260 varieties, and contributing in itself a great feature of interest. The blooms were not regularly disposed in stands, but placed in small stone bottles and tastefully blended. It was difficult to pick out individual examples amongst so many of a meritorious character, but some were of remarkable size.

Incurved in twenty-four varieties were staged by Mr. Berry, The Gardens, Roehampton House, Roehampton, who had small but fresh neat blooms. Mr. Wildsmith, gardener to the Hon. E. L. Shaw-Lefevre, exhibited twelve (with a twenty-four card), these comprising good blooms of Princess of Wales, Jeanne d'Arc, Lord Alcester, and Lord Wolseley, but somewhat rough.

A capital stand of twenty-four Japanese came from Mr. Fyfe, gardener to Lord Wantage, Overstone Park, Northampton. Album Fimbriatum, Edwin Molyneux, Moonlight, Florence Percy, and Elaine were good. Mr. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, and Messrs. Clibran, Altrincham, also had good stands of twenty-four, the blooms being of good size, fresh, and well coloured. Mr. Pope, The Gardens, Highclere Castle, Newbury, also exhibited. Stands of twelve Japanese came from Mr. R. Falconer Jameson, Hessel, Hull; and Wildsmith. The former's flowers were large and fine, but one or two a little the worse for their journey. Mr. Wildsmith's blooms were very fresh.

Reflexed were shown in capital condition by the last named. Cullingfordi was very richly coloured, King of Crimson large and fine, Cloth of Gold and Amy Furze also good. Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Surrey, had a very neat and pleasing stand of Pompons, in which Cendrillon, Black Douglas, Prince of Orange, and Marabout were noteworthy. Messrs. Paul & Son, The Old Nurseries, Cheshunt, had a beautiful stand of large Anemone-flowered, comprising a superb bloom of Sabine, and excellent flowers of J. Thorpe junior, Nelson, Jeanne Marty, Nelson, and Souvenir de Madame Blandinières.

Several classes were provided for Japanese and incurved, one colour only in a stand. Mr. Berry showed Empress of India as white incurved, a smooth, level lot. In the corresponding yellow class Mr. Molyneux had a magnificent stand of Golden Empress of India, every bloom large, well built, solid, smooth, fresh, and superbly finished. Mr. Berry also showed this variety with Emily Dale. White Japanese formed a pleasing display. Mr. Berry had Mdle. Lacroix, Maiden's Blush, and Avalanche in capital condition; Mr. Falconer Jameson, Avalanche, Mons. Astorg, Florence Percy, and Elaine; Mr. Doughty, gardener to Mrs. Tomlin, Cranbrook, Kent, a beautiful stand of Elaine. Mr. Burnett, The Grange Gardens, Hillingdon, Uxbridge, had a good stand of Roi des Japonais in the orange or bronze class, a very fine lot of Val d'Andorre in the red and crimson class, and good blooms of Madame C. Audiguier and Madame J. Laing in the lilac or pink class.

Amongst the new Chrysanthemums exhibited were L'Automne, Etoile de Lyon, Alfred Lynes, Stanstead Surprise, President Hyde, Annie Clibran, Thomas Stevenson, and Jeanne Marty from Messrs. Clibran; Mrs. James Carter, Holborn Beauty (Japanese), and James Carter (decorative reflexed) from James Carter & Co., 237, High Holborn, London; Mrs. Bevan Edwards, yellow sport from Mr. R. Brocklebank, by Mr. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall, Liverpool; Yellow Pompon Alice Storey, by Mr. G. Stevens, Putney; Lady Pet (Japanese), sport from Madame J. Laing, by Mr. W. Heath, Hampton Manor Gardens; Mrs. Horril reflexed, sport from George Glenn (name of exhibitor not observable); Miss M. A. Haggas (incurved), Violet Tomlin (incurved), James Weston (Japanese Anemone), and Puritan (Japanese) from Mr. E. Molyneux; and, lastly, the remarkable white incurved variety illustrated on another page, Mrs. Alpheus Hardy, of which a plant bearing six blooms was exhibited by Mr. Ware of Tottenham, and one with a single flower by Mr. Appleby, Dorking. The awards had not been published on going to press, and the certificated varieties will be described in another issue.

Mr. Parker, Impney Gardens, Droitwich, exhibited a beautiful basket of blooms that had been grown out of doors in ordinary soil

against a wall, and merely protected from heavy rain by boards. They comprised many well-known exhibition sorts in very good condition, and had been cut on November 4th. The new "Jameson" exhibition spring cup support and name card holder were exhibited by Messrs. E. P. Dixon & Sons, Hull; Messrs. R. Beale & Co., New Southgate, London, N., showed examples of Chrysanthemum propagation by leaves and cuttings in their fertilising moss. There were some paintings of Chrysanthemums from the Royal Gardens, Kew, also dried specimens.

The Conference was opened by an address from Mr. T. B. Haywood, and papers were read by Messrs. Payne, Molyneux, Wright, and Hibberd, which will be referred to in a future issue.

BRIGHTON—Nov. 5th and 6th.

THE seventh annual Exhibition of the Brighton and Hove Chrysanthemum Society was held on Tuesday and Wednesday last in the Dome and Corn Exchange, near the Pavilion, and proved to be the best this flourishing young Society has yet held, both in quality and number of exhibits. Over 400 entries were received, and the competition in some of the classes was remarkably keen. For example, in the cup class there were no less than ten entries, or a total of nearly 500 blooms, constituting a show in itself. Other classes for cut blooms were also well filled, those for plants, fruit, and vegetables bringing many competitors, and assisting materially in increasing the interest of the Show. The groups of Chrysanthemums also constituted an important feature, and, arranged as they were round the sides of the Corn Exchange, they produced a good effect. The latter building is very spacious, and admirably adapted for the purpose, as, while allowing due space for the exhibits, it also affords ample room for the thousands of visitors during the evening. The Dome is a handsome building, of circular form, in which some of the cut flowers were placed, with specimen plants, and a grand group of Palms, Ferns, Cycads, and Chrysanthemums in front of the organ was one of the most effective examples of plant arrangement we have ever seen at an autumn show.

The schedule provided forty-six classes, besides eighteen special classes, in which the prizes were contributed by local and other friends of the Society. A total of about £120 was offered in prizes (besides the £10 silver cup in class 9), an increase on last year, warranted by the satisfactory state of the finances. Few societies start the year with a balance to their credit of £88, yet that was the position of the Brighton Society at the beginning of 1889, and it is probable that the Show here recorded may lead to an advance upon this substantial amount. Such a state of affairs indicates liberal local support and excellent management, and as the result of seven years' work it is most creditable to all concerned. The Secretary, Mr. Mark Longhurst, has assisted considerably in the development of the Society, his energy and business-like method of procedure, aided by a practical Committee, of which Mr. R. Miller is the able Chairman, having conducted largely to the present satisfactory condition.

Cut Blooms.—These classes constituted the great feature of the Show, and the leading class was that for forty-eight blooms, not less than thirty-six varieties, or more than two of one variety. This was open to all exhibitors, the first prize consisting of a silver cup value £10 and £7 in cash, the second prize £6, the third £3, and the fourth £2. The cup was offered under the conditions that if an exhibitor won it twice (not necessarily consecutively) it should become his property, but if it be won by three different exhibitors in the first three years the competition in the fourth year should be confined to them.

No less than ten exhibitors entered, and the array of blooms had a magnificent appearance; in fact we do not remember so fine an effect produced by one class. The Judges in this section (Messrs. G. Gordon and L. Castle) had a formidable task to perform, but the real contest laid between two competitors, and after a very careful examination and pointing, the first honours were accorded to Mr. W. Nevill, gardener to F. W. Flight, Esq., Cornstiles, Winchester, who had excellent blooms of the following varieties, very fresh, bright, clean specimens, and remarkably even throughout. *Incurved.*—Back row: Golden Queen of England, Empress of India, Golden Empress, Lord Wolseley, Lord Alcester, Golden Queen, Alfred Salter, and Golden Empress. Middle row: Jeanne d'Arc, Mrs. Shipman, Violet Tomlin, Miss Haggas, Princess of Wales, Lord Wolseley, Jeanne d'Arc, and Mrs. Shipman. Front row: Prince Alfred, Mrs. Heale, Mr. Brunlees, White Venus, John Salter, Lady Hardinge, Nil Desperandum, and Princess of Wales. *Japanese.*—Back row: Stanstead White, Val d'Andorre, Boule d'Or, Madame B. Pigny, Val d'Andorre, Ralph Brocklebank, M. Bernard, and Stanstead White, a grand corner bloom, the finest in the Show. Middle row: L'Or du Japon, Sarah Owen, Bertha Flight, Ralph Brocklebank, Stanstead Surprise, Boule d'Or, E. Molyneux, and a variety we missed. Front row: Mdle. Lacroix, Sunflower, M. J. Laing, Mars, Avalanche, Madame J. Laing, Mrs. J. Wright, and Mdle. Lacroix.

The second prize was adjudged to Messrs. J. & G. Drover, Fareham, who had admirable blooms, the Japanese being nearly equal to those in the first stand; the back row of incurved was also formed of heavy handsome blooms, but there was a falling off in the two front rows. The varieties were, however, so good that they are worth naming. They were arranged in the following order. *Incurved.*—Back row: Lord Alcester, Golden Queen, Lord Alcester, Queen of England, Empress of India, Alfred Salter, Empress of India, and Golden Queen. Middle row: C. Gibson, Princess Teck, Golden Empress, Nil Desperandum, Queen of England, Lord Wolseley, Golden Empress, and Nil Desperandum. Front row: Novelty, Prince Alfred, Cherub, Princess of Wales, Barbara, Jeanne d'Arc, Refulgence, and Eve. *Japanese.*—Back row: Carew Underwood, Boule

d'Or, Triomphe de la rue des Châlets, Monsieur J. M. Pigny, F. Marrouch, Carew Underwood, Boule d'Or, and Baronne de Prailly. Middle row: Gloriosum, Madame J. M. Pigny, E. Molyneux, G. Maclure, E. Molyneux, Madame Baco, Meg Merrilies, and Belle Paule. Front row: Madame Baco, J. Délaux, Mdle. Laeroix, Sarah Owen, Fimbriatum, J. Délaux, Madame C. Audiguier, and Florence Percy. The third prize was secured by Mr. C. Penfold, gardener to General Sir F. Fitzwygram, Bart., Leigh Park, Havant, who had capital blooms, fresh, bright Japanese, and neat even incurved. Mr. J. Hopkins, gardener to R. Thornton, Esq., J.P., High Cross, Framfield, was fourth, his Japanese being notable, the front row especially. The other stands were all good, and some of them well merited recognition had the prize list admitted it.

In other classes the competition was also close. The best twenty-four Japanese were shown by Mr. T. Glen, gardener to Mrs. Montefiore, Worth Park, who was first in that class, followed closely by Mr. G. Duncan, gardener to C. T. Lucas, Esq., Warnham Court, Horsham; Mr. M. Russell, gardener to D. C. F. Lewis, Esq., Henfield; and Mr. J. Hopkins, in the order named. Amongst twelve competitors with twelve Japanese Mr. A. Emery, gardener to R. W. Tweedie, Esq., Avoca, Eastbourne, won first honours with excellent blooms, and the same exhibitor secured a number of prizes in other classes throughout the Show. Mr. C. Sayers, gardener to Mrs. Cook, The Hall, Mitley, was second; and Mr. C. Fowler, gardener to Mrs. Hall, Henfield, third. Incurved were shown by Messrs. Emery, Sayers, Roberts, and Papworth, who took prizes in the order named, Mr. M. Russell having the first prize for the only collection of twenty-four incurved. Anemones were well shown by Mr. Phillips, gardener to Dr. Baker; Reflexed by Mr. S. Coleman; Pompons by Mr. Russell; and six Japanese, one variety, by Mr. Emery, who had Avalanche in good condition; Mr. Glen being second for the same variety, and Mr. Hopkins third with Val d'Andorre.

About seventeen groups of Chrysanthemums were staged in two classes, Mr. G. House, gardener to F. Mowatt, Esq., Withdean Hall, Patcham, taking premier honours in Class 1 (100 square feet), an effective group, in which Val d'Andorre and J. Délaux were freely used in contrast with white varieties. Mr. A. Fry, gardener to C. W. Catt, Esq., 52, Middle Street, Brighton, gained a similar place in Class 2 (60 square feet) with a bright arrangement. Other exhibitors and prizewinners in these classes were Messrs. Spottiswood, W. Miles, J. Tulley, F. Collis, and Meachen. Mr. A. Seutt, gardener to G. S. Jenkins, Esq., Franklands, Burgess Hill, had four excellent standard Chrysanthemums, gaining the first prize; Mr. Hill having the best pyramids.

To the other exhibits we cannot refer in detail this week, but in the fruit classes there was good competition, the principal winners being for Grapes Messrs. Duncan, Spottiswood, and Phillips; Apples, Messrs. Duncan, Harris, Bunney, Slidworthy; Pears, Spottiswood, Duncan, and Bunney. Vegetables also were well shown, as were table plants, Mignonette, Primulas, and Cyclamens.

Non-competing exhibits comprised a neat, tasteful group of Chrysanthemums and foliage plants, to which we shall refer again—Star and Crescents of Elaine and Ferns, with a group of miscellaneous plants. The admirable group in the Dome, from Mr. W. Balechin; also a collection of Apples. Mr. R. Miller had a group of Chrysanthemums, and Mr. A. Fry an interesting group of Orchids, Nepenthes, and Ferns. A large collection of Apples was sent from Messrs. Cheal & Son, and there were several other exhibits which cannot be noted this week.

GOSPORT.—OCTOBER 31ST.

THE honour of commencing the Chrysanthemum Exhibition season of this year fell to this thriving young Society, which opened a two days Show in the Thorngate Hall on the date named. As proving that the seasons change, it is an unusual fact that a public exhibition of Chrysanthemums should be held in October, this date being not the least too early, as evinced by the exhibits staged in the hall above named. Although not of large dimensions, it is light and capital for an exhibition of this kind. The arrangements were excellent. The groups of Chrysanthemums, of which there were nine, were arranged down one side of the hall, the specimen plants on the opposite side. Two tables running down the centre of the hall contained the cut blooms, table plants, &c., the whole reflecting credit upon Mr. Mitchell, the Secretary, and the Committee, of whom Mr. Groom is Chairman.

Cut Blooms.—These formed the most important part of the Exhibition, between seven and eight hundred being staged, and these were of even quality throughout, making a good display. Especially high in point of quality were the blooms staged by the cottagers, and in many cases they were superior to those staged by gardeners. The most important class was for twenty-four distinct varieties, twelve to be Japanese and the remainder incurved. Amongst four competitors the best came from Mr. A. Abrahams, gardener to T. H. Wilson, Esq., Hazelholt, Bishop's Waltham, who had a capital stand, the Japanese being large, solid, and of capital colour. The varieties were as follows:—Incurved—Back row: Lord Wolseley, Golden Queen of England, Alfred Salter, and Lord Alcester. Middle row: Empress of India, Golden Empress, Jeanne d'Arc, and Queen of England. Front row: Refulgens, Mrs. Heale, Mr. Bunn, and Mr. Brunlees. Japanese—Back row: Madame C. Audiguier, Avalanche, Baron de Prailly, and Boule d'Or. Middle row: Madame Laing, Edwin Molyneux, Meg Merrilies, and Ralph Brocklebank. Front row: Florence Percy, Peter the Great, Belle Paule, and F. Marrouch. Mr. W. Herrington, Beesom Street, Portsmouth, was a good second with large fresh Japanese, and very neat medium-sized incurved specimens. Edwin Molyneux, Mrs. J. Wright, Sunflower, and Criterion were the best in the former

section. Mrs. W. Shipman, Jardin des Plantes, and Jeanne d'Arc were the most noteworthy in the incurved. Mr. W. H. Gale, gardener to G. Cooke, Esq., Gosport, was a good third. In this stand was an uncommonly fine bloom of Condor, a large Japanese, with a faint tinge of blush running through the broad florets. Those competed in the class for eighteen Japanese, Mr. H. Gale winning easily. Sunflower, Condor, Mr. F. W. Burbidge, pure white; Jeanne Délaux, and Madame Baco were the best. Mr. G. Hawkins, gardener to E. Laphorne, Esq., Gosport, was second with smaller, but fresh blooms. For the same number of incurved distinct Mr. H. Gale continued his success by winning easily with small but neat blooms. Mr. F. Limburn, Gosport, was second. For twelve large Anemones Mr. Hawkins was the only exhibitor, staging good specimens of Lady Margaret, Grand d'Alvéole, George Sand, and a sport from the latter named George Hawkins, the centre deep yellow, the guard florets lemon, quite a promising variety. This exhibitor was an easy first in the class for twelve reflexed in not less than six varieties amongst five competitors, King of Crimsons, Cullingfordi, Cloth of Gold, and Peach Christine being the most noteworthy. Mr. W. H. Fay was second with small blooms. Mr. Gale was the only exhibitor in class 10, for twelve Japanese Anemone blooms, staging fresh well built samples of Fabian de Médiana, Sœur Dorothee Souille, Mdle. Cabrol, and Minnie Chate. For a stand of Anemone and Japanese Anemone in twelve blooms, Mr. C. Miller, gardener to Dr. Marlow, C.B., took first honours with Thorpe, jun., Margaret Villageoise, Miss Annie Lowe, and George Sand as some of the best. For the best Japanese and incurved, single blooms shown in glasses, Mr. G. Hawkins easily gained first honours with solid blooms of Avalanche and Prince Alfred. This exhibitor followed up his previous success by taking first honours for twelve sprays of Pompons, three flowers to a spray, with foliage as cut from the plant, with even-sized blooms of leading varieties.

Plants.—For the best group of Chrysanthemums arranged in a space not exceeding 30 square feet there were five exhibitors, all staging in the usual bank style. Nearly all had good blooms, but in some instances a great want of finish in arrangement was perceptible, too much of the bare stems and pots being visible; with a little more attention to this the groups would be greatly improved. Mr. Gale had much the best arrangement, Mr. Hawkins second. For six specimens, the diameter to be not more than 3 feet, there were four entries, Mr. Gale easily leading with freely trained and flowered examples of Mrs. G. Rundle, Madame Bertier Rendatler, and Lady Selborne; Mr. J. Groom, Gosport, second. Mr. Gale was easily first for six Pompons, freely flowered.

Apples and Pears in four dishes of each were well shown by Mr. J. Long, gardener; Mr. Walter Bunney and Mr. Hawkins both staging well in their respective sections. The latter exhibitor staged the best black Grapes—Alicante, while Mrs. Groom had the best white in two bunches. The competition in the vegetable classes was keen, Mr. Hawkins winning for nine varieties.

HAVANT.

THE Havant Chrysanthemum Society held its sixth annual Show at the Town Hall, Havant, on the 1st and 2nd inst. This Show is not one of the largest of its kind, but the products shown—whether flowers, fruit, or vegetables—are of high quality throughout. The "Havant" is one of those local Societies started and managed by a few kindred spirits within the township, and the amount of enthusiasm and hearty goodwill among its members gives one an insight into the benefits derived by such associations, apart from the mere growing of Chrysanthemums.

The exhibits this year were quite up to the usual good quality. In the vegetable classes Mr. N. F. Fuller, gardener to Sir J. Clarke Jervoise, Bart., Idsworth Park, maintained his reputation as a highly successful cultivator in the kitchen garden; Mr. C. Penfold, Mr. J. Garnett, gardener to Major Reeves, and Mr. Kinshott, gardener to Mrs. Hodgkinson, also showing well in these classes. Grapes and other fruits were of excellent quality throughout, and brought strong competition, principally by the same exhibitors in the Chrysanthemum classes, showing that "mums" do not occupy all a gardener's time.

This year there was only one class for plants, and that for a group. Three splendid masses were put up, the quality of the blooms being in many instances equal to the best of the cut flower classes. The prizes were awarded to Mr. W. Roberts, gardener to E. R. Longcroft, Esq.; Mr. W. Moseley, gardener to J. Taplin, Esq.; and Mr. Agate, florist, Havant, in the order named. *Cut Flowers.*—In the principal class for twenty-four blooms, twelve incurved twelve Japanese, the first prize fell to Mr. Penfold, gardener to Sir T. Fitzwygram, Bart., M.P., who staged very fine blooms of Incurved.—Empress of India, Refulgens (rarely seen so fine), Lord Alcester, Golden Empress of India, Lord Wolseley, Mrs. Heale, Violet Tomlin (good), Jeanne d'Arc, Miss M. A. Haggis, Princess of Wales, Mrs. W. Shipman, and Prince Alfred. Japanese.—Pelican (very fine), Madame C. Audiguier, Carew Underwood, Baronne de Prailley, M. J. Pigny, Edwin Molyneux, Condor, Val d'Andorre, Ralph Brocklebank, Florence Percy, Bernard, and Sunflower (the latter magnificent). The second prize went to Mr. A. Payne, gardener to Mrs. Ernald Smith; third, Mr. Woodfine, gardener to C. P. Boyd, Esq.; fourth, Mr. Fuller, who staged the best bloom of Avalanche, an exceedingly fine example. For eighteen cut blooms, first, Mr. W. Roberts; second, Mr. J. Agate; third, Mr. W. Moseley. The winners of other classes were as follows:—For twelve Japanese, Messrs. Penfold, Woodfine, and Payne; for twelve incurved, Messrs. Penfold, Payne, Roberts, and Agate; for twelve Anemones, Messrs. Penfold, Payne, and Fuller; for twelve reflexed, Messrs. Woodfine, Roberts, and Penfold; for twelve Japanese Anemones, Messrs. Penfold, Fuller, and Agate; for

twelve new varieties, Messrs. Agate, Penfold, and Fuller; for twelve Pompons, Messrs. Roberts, Agate, and Moseley.

In the amateur classes Mr. J. Horril, master of Havant Union, Mr. R. Sainthill, and Mr. H. M. Green, all showed with much credit in several classes. There was also a class for hand bouquets, but the exhibits were wanting in taste and badly arranged.—D.



FRUIT FORCING.

FIGS.—Early Forced Trees in Pots.—If these have been placed in the open air they should be taken under cover to protect them from the cold autumn rains. It is presumed that the trees have been top-dressed and repotted, or had the drainage rectified, as advised in a former calendar. The trees should be placed in a rather dry well-ventilated house. Any thinning or shortening crowded attenuated growths must be attended to, and the trees dressed with an insecticide; 8 ozs. of soft-soap to a gallon of water may be used for washing the trees, using a somewhat stiff brush, especially if scale has been present, following with the same to which sulphur has been added to bring it to the consistency of cream, being careful not to damage the points of the shoots and the embryo fruit. A dish of forced Figs early in the season is now considered a daily necessity in large establishments, and it is not by any means difficult to obtain, but a well-ventilated house is necessary, with the command of plenty of heat, having pits containing fermenting materials to afford bottom heat to stimulate the roots. The Figs in pots require abundance of liquid manure when growing, the trees being most prolific under limited root space. One of the great advantages of Fig culture in pots is the number of varieties that may be grown in a house of moderate dimensions, which, if forced early, come in at a time when the dessert is not too varied. Brown Turkey is unquestionably the best Fig for general purposes, and the best white is White Mar-silles. The following are also well suited for forcing and pot culture: Osborne's Prolific, Early Violet, Black Ischia, Brown Ischia, Violette de Bordeaux, Negro Largo, Angelique, White Ischia, Col di Signora Bianco, and Royal Vineyard.

Early Forced Planted Out Trees.—These should now be untied from the trellis and pruned. Those with the roots restricted to small borders will require the shoots thinned where too crowded, but those not having the roots restricted will need a hard pruning at the upper part of the trellis, cutting back those shoots that have reached the limit where the succeeding shoots are to start. Remove any elongated spurs, reserving such as are short jointed and fruitful. The house should then be thoroughly cleansed, washing the woodwork with scalding water, and the walls afterwards with quicklime and sulphur. Wash the trees with soapy water, and afterwards dress with an insecticide. Then secure the trees to the trellis, allowing room for the growth of the branches, forking the surface of the border slightly, removing the loose material, and apply a top-dressing of short partially decayed manure, about 3 inches thick, giving a good watering. Ventilate freely at all times, except when frost prevails.

Succession Houses.—Prune and cleanse the trees without delay, especially where insects are present. Complete any root-pruning and lifting, remembering that Figs with the roots restricted or confined to limited areas are more manageable and fruitful than with an unlimited root area. Any unfruitful trees should be rather severely root-pruned, and the roots restricted to moderate-sized borders, depending more upon active feeders near the surface encouraged by mulching than a large extension of roots.

VINES.—Early Forced.—Those Vines for affording ripe Grapes in April must now be started, whether in pots or planted out. Bottom heat in neither case is indispensable, though in all forcing operations it hastens growth considerably; therefore place fermenting materials in the pit, in which case those in pots are stood on pedestals of loose bricks, being careful not to allow the heat about the pots to exceed 70° to 75°. Suspend the canes in a horizontal position over the fermenting material to insure a regular break. Syringe three times a day, keeping every part of the house moist by sprinkling in bright weather. Vines started at this season require a higher temperature to excite the buds than those started later. A temperature of 50° to 55° at night and 60° to 65° by day will not be too much to start with. Those planted out should have the border inside thoroughly soaked with water or liquid manure, preferably at 90°. The border or floor of the house should, if convenient, be covered 2 feet deep with leaves and stable litter in a state of fermentation, occasionally turning the material, as the ammonia given out along with the moisture is very beneficial. The outside borders must be covered, if fermenting materials are not obtainable, with a good thickness of leaves, with tarpaulin, shutters, or lights to throw off rain or snow.

Houses for Starting in December.—Complete the pruning, as it promotes rest. Two buds are ample for affording useful bunches, but Vines that do not afford bunches as large or so freely as desired should be

allowed more—four to six, according to their vigour, yet with the wood stout and short jointed the close pruning will afford the best results, as what is gained in size of bunch is lost in size of berry, compactness of bunch, and good finish. A useful bunch of well coloured thoroughly ripened Grapes is always appreciated. Dress the Vines, cleanse the house, having all in good order ready for a start at the proper time.

CUCUMBERS.—Allow a night temperature of 70° in mild weather, 5° or 10° less in severe weather, and maintain a temperature of 70° to 75° by day artificially, advancing to 80° and 85° with sun heat. Admit a little air at the top of the house whenever the weather is favourable, but it must be done without lowering the temperature, as it is better to shut off the top heat for an hour or two when the sun is powerful than to admit air when the winds are sharp and cold. Moderate ventilation is, however, beneficial in carrying off steam or accumulated moisture. The syringe may be laid aside except for damping the paths and walls in the morning and afternoon in warm bright weather, keeping the evaporation troughs filled with liquid manure. The water or liquid manure given to the roots must be of the same temperature as the house, as also must the soil that is added to the beds.

The autumn fruiteders being now in full bearing must not be over-cropped, therefore remove the fruit as soon as it attains a fair size, and all deformed fruits when seen. Examine the plants at least once a week for the removal of bad leaves, stopping or cutting away superfluous growths.

Let the winter fruiteders advance well up the trellis before stopping them, training the side growths evenly, and not more closely than to allow of the foliage being exposed to light. Stop at a few joints of growth, or one or two joints beyond the show of fruit. Allow few or no male blossoms or tendrils, removing them as fast as they appear, and add fresh warmed soil as often as the roots have fairly covered the surface of the bed.

THE BEE-KEEPER

WEAK STOCKS AND HOW TO TREAT THEM.

THERE are at the present time not a few bee-keepers who, either owing to inexperience or want of care, have stock hives which, even if they survive the winter, will, unless extra precautions are taken to assist them, fail to give satisfaction to their owners. In order to secure early swarms—and early swarms mean increased profit—all stocks in autumn should be made strong in bees and well supplied with food, so that however inclement the spring may be there will be no risk of starvation. This is very necessary, for it is well known amongst bee-keepers of experience that bees are provident insects, and unless they see stores in sufficiency within their reach, will decline to add to the number of consumers by rearing brood. Some time ago I gave my reasons for condemning the spreading of brood, so strongly advocated by some bee-keepers who have found it answer. In my experience nothing is necessary to ensure early swarms but a proper judicious autumn preparation. It is, however, now too late for those who have not already done so to remedy the evil which must follow from their negligence if means are not taken, as far as possible to alleviate the mischief. I am thinking more particularly of stocks which have store sufficient to last until the end of February or the beginning of March. In passing it may be well to remark that if doubt exists as to there being a sufficiency of food to last until that time candy should be supplied at once, and a fresh supply given as soon as the first is consumed.

With respect to stocks which are rather weak in bees but have honey enough to last till March, it appears to me that it is wiser and better to act in a somewhat different manner. Suppose, then, we have a stock in March whose food supply is deficient, 5 or 6 lbs. of good beet sugar syrup should at once be given as rapidly as the bees will take it. If then the weather is not very cold give a few ounces of syrup every day until the season is so far advanced that natural supplies take the place of artificial. It has never seemed to be necessary to use any of the clever inventions so freely recommended for limiting the supply of syrup or allowing the bees to take only very little at once. For this purpose no feeder is, as far as I can see, in any way superior to a cover or bottle of small size filled or partially so each day, covered with net or muslin, and inserted on a piece of perforated zinc placed permanently on the top of the hive. This bottle filled each day is quite a sufficient stimulant for any,

stock, but when once this feeding has been commenced it must not cease, even for a few days, or the result will probably be to undo all the benefit which weeks of care have conferred upon the stock. In using a bottle feeder there is some little care requisite in order to obtain the best results, and it may not be lost labour to explain somewhat in detail the method which appears to be the best. On the hive, then, which it is intended to feed a piece of perforated zinc should be placed large enough to take the place of the cover previously in use on this zinc; a piece 4 inches square is a good size, and can be used either on a straw or wooden hive. Several pieces of thick carpet should then be placed on, each one having a hole in it just large enough for the insertion of the neck of the bottle; the whole should be covered when the feeder is in position with warm material in order to keep all snug and prevent the loss of heat. Two bottles for each hive much facilitate the operation, the one ready filled to take the place of the one removed when emptied by the bees.

It is hardly necessary to add that the greatest care must be taken not to spill the syrup, which for spring feeding may be of a rather poorer quality than that used in autumn, because in spring more water is required for the brood, and if a larger proportion of water is used in the syrup the bees are not compelled to go abroad for it when the weather is so bad as to be very destructive to them. It must be understood that stimulative feeding is only recommended here in order to repair previous neglect. If a hive has been properly prepared, and no accident happens to prevent it, either by the loss or debility of the queen, a swarm will certainly issue in the early part of May.

But it may be said there is danger attendant upon this feeding, and in this respect it is little better than spreading brood. That there is some danger in thus feeding a stock in early spring cannot be denied, because the bees are thereby incited to fly on days and in weather when stocks left to themselves are quiet, but it cannot compare with brood-spreading for danger. In order to spread brood the hive must be opened and the cluster disturbed, heat lost, and the brood nest artificially enlarged, and unless the operator is a man of experience often enlarged so greatly as to prevent the bees on cold frosty nights, which occur even in late spring, from keeping up heat sufficient to hatch out all the eggs deposited. Stimulative feeding does no doubt induce the queen to lay more freely than she otherwise would do, but there is no loss of heat by opening the hive, dividing the cluster, and disturbing the bees. If a stock is strong and has a good store of honey it should be left undisturbed, and the very fact that so much more time has to be expended on a weak stock in order to bring it up to swarming point as early as a stronger and better provided hive shows how great a saving there is in having all the stocks strong enough to cause no anxiety or fear.

Stimulative feeding in spring is sometimes a necessary evil. Judiciously done no harm accrues from its use, but care is essential in this as in every other operation not to carry the practice to an extreme. In spring every cell filled with honey not required for use is a bee less, so that it is evident that to give too much defeats the object we have in view. A hive cannot be too warm in spring, so that great care should be taken to wrap up any feeder which may be used as warmly as possible in order to retain the heat, without which no brood can be raised. In cases of this description it is well for a bee-keeper who doubts the efficiency of this practice to try half his stocks assisted as explained above, the other half left to their own devices, but supplied, of course, as early as the weather will allow with syrup enough to last until the end of April or beginning of May. In trials such as these the queen of one stock may and is sure to be superior to the queen of another, but still a fair idea of the merit of the system may be gained by a careful watching over the results following from its adoption, and its value or worthlessness proved by all who have the good fortune to be bee-keepers, and who hope some day to be bee-masters.—FELIX.



“All correspondence should be directed either to “THE EDITOR” or to “THE PUBLISHER.” Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.

In consequence of the extraordinary pressure that will be experienced during the Chrysanthemum season questions cannot be answered with the usual promptitude, and especially those arriving after Saturday. See notice below relative to the naming of fruit.

Taking a Business (B.).—We would not advise you to take a business on so small a capital unless you have had full experience in the matter. The majority fail from starting with insufficient capital, but in any case very much must depend upon a man's energy and industry.

Hyacinths in Glasses (E. M.).—We have heard of a few drops of ammonia being added to the water, but have not tried it, and the finest of spikes are grown in soft water with a few pieces of charcoal placed in to keep it pure. We attach far more importance to sound solid bulbs than to any manurial additions to the water.

Pear Tree Decaying (An Old Subscriber).—The tree is probably worn out, or the roots are either in cold wet soil or in a dry poor medium. Trees cannot grow healthily if the roots do not work freely in soil from which they can gather sustenance of the proper kind for fruitful growth. You do not say a word about the soil, therefore we cannot tell what treatment might improve it and do the tree good.

Fruit Trees for Chalk Soil (E. A.).—The chalk being overlaid by a foot or more of good loam is a suitable one for most varieties of Apples and Pears, those named in answer to “J. C. D.” being suitable. A chalky soil is peculiarly suited to Plums, some of the best of which are Jefferson, Green Gage, Oullins Golden, Kirke's Transparent Gage, and Coe's Golden Drop; and for culinary purposes Early Rivers, Morocco, Victoria, Magnum Bonum, Pond's Seedling, and Nectarine Plum.

Selection of Apples and Pears for Succession (J. C. D.).—Dessert Apples:—Irish Peach, Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Ross Nonpareil, Adam's Pearmain, Rosemary Russet, Reinette de Canada, Ribston Pippin, Court Pendu Plat, Lord Burghley, and Sturmer Pippin. Kitchen Apples:—Keswick Codlin, Lord Suffield, Stirling Castle, Golden Noble, Cellini, Cox's Pomona, Ecklinville, Bramley's Seedling, Lane's Prince Albert, Kentish Fillbasket, Winter Greening, and Norfolk Stone Pippin. Dessert Pears:—Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Flemish Beauty, Beurré Superfin, Louise Bonne de Jersey, Doyenné du Comice, Marie Louise, Pitmaston Duchess, Winter Nelis, Glou Morceau, and Josephine de Malines.

Evergreen Flowering and Berry-bearing Shrubs (Idem).—Arbutus Unedo Croomi, Aucuba japonica limbata, A. longifolia, and A. maculata, but to have these produce berries it is necessary to have the male variety, A. japonica maculata; Berberis Darwini, B. stenophylla, Buddlea globosa, Cotoneaster microphylla, Daphne Fioniana, Escallonia macrantha, Garrya elliptica; Hollies, both green-leaved and variegated, in great variety; Ligustrum sinense nanum, Olearia Haasti, Rhampholepis japonica, Skimmia japonica, Ulex europæa flore pleno, Veronica Traversi, and Viburnum Tinus. In suitable soil there are the finest of flowering evergreen Rhododendrons in endless variety.

Name of Apricot (Young Hand).—It is almost impossible to correctly name a variety of Apricot from leaves only. We have compared those sent with the leaves on the trees forming a fairly large collection, and in all probability if you order the Royal you will get what you require. The following description of this variety taken from Dr. Hogg's “Fruit Manual,” may serve as a clue:—“Royal.—Large, oval, and slightly compressed; skin, dull yellow, tinged with red where exposed; suture shallow; flesh, pale orange, firm, juicy, and vinous, separating from stone; stone, large and oval, impervious; kernel, bitter. An excellent Apricot, and little inferior to the Moorpark. Ripe in the beginning of August.”

Name of Beetle Grub (J. T.).—There were grubs enclosed, but not a beetle also, as stated by you, which must therefore have in some way escaped, but it is not likely to be the species into which the grubs develop afterwards. They are those of the destructive weevil, *Otiorynchus sulcatus*, and occur from August to March at the roots of plants. Probably they feed throughout the winter, as cold appears to have no effect upon them. Soot and lime have been sometimes found to kill this grub, also a weak solution of paraffin combine with soap, but it is not easy to remove it without injuring the plants. In soil suspected to contain this grub, where the plants have been removed, its extirpation may be accomplished by working in some fresh gaslime, previously combined with an equal quantity of dry earth.

Seyphanthus volubilis (S. T. W.).—*Grammatocarpus volubilis*, better known under the name of *Seyphanthus elegans*, is a native of Chili, whence it was introduced to this country about the year 1824, but from inattention to the collecting of seeds was lost to cultivation, appearing again among more recent introductions. It is a hardy annual, having a very slender twining stem, which is hard and wiry, covered with small stiff hairs bent downwards, making it rough to the touch, but entirely devoid of the stinging properties of its near ally the *Loasa*. The leaves, which are opposite, are pinnatifid, with fringed margins. The flowers are large, cup-shaped, and of a beautiful lively yellow tint, being sessile and terminal when the buds first appear, but the young shoots are generally produced on each side, so that when full expanded it is between two branches or forks. Planted against a south wall with a few twigs to cling to it has a very pleasing effect, growing from 8 to 10 feet high, and is well adapted for covering old or unsightly walls. It is also well adapted for covering trellis-work in the flower or pleasure garden, and is unequalled in the form of a screen, having also the advantage of giving variety to those generally grown.

Indigoferas (J. H. M.).—Several species are grown, such as *I. decora*, *I. floribunda*, and *I. incana*, which are evergreen shrubs, with pea-shaped flowers, of a pink or rosy purple colour. They are of free growth, and require the wood well ripened to ensure profuse flowering. Prune in February or March, when the plants are beginning to grow, cutting them in rather closely, or in case of old plants spur the shoots in to two or three eyes of their base. Young plants will need to have the shoots left longer, and if in a cool, airy part of the house they will break naturally and strongly. When the young shoots are an inch long turn the plants out of the pots, remove most of the old soil—all that comes away without destroying the roots—put in the same size of pot or a little larger, and place in a close pit, shading from bright sun until the potting is recovered from, then expose to light and air, syringing with water morning and evening up to flowering time to keep down red spider. When the roots are slightly matted around the sides of the pot shift into a pot 2 to 4 inches larger in diameter, providing good drainage. Water abundantly when growing and flowering, afterwards expose fully to light and air, and in winter keep the soil dry, not, however, so as to cause the wood to shrivel or leaves to fall prematurely. Equal parts of sandy peat and fibrous loam, a little leaf soil or old dry cowdung and silver sand, with a like quantity of pieces of charcoal, form a suitable compost. They attain a height of 3 to 4 feet, and are best trained as bushes.

Lilacs for Forcing (W. W.).—If you require a supply of blooms for cutting and plants suitable for decoration from early in the season until the flowers are plentiful outside, lifting plants from shrubby borders and returning them to these quarters again after they have flowered will in time end in disappointment. The best variety for forcing and yielding a supply of bloom, either white or its natural colour, is Charles X. In order to be successful two batches of plants should be grown, so that they can be forced alternately into bloom. Those forced last winter and spring and retained in pots will not have made growth sufficiently strong to flower again this year. These plants should now be cut hard back, leaving only one eye of the young wood for the growths to start from another year. They should be turned out of their pots, the balls partially reduced, and then placed in 7 or 8-inch pots according to their size and strength. The pots used should be fairly drained, and the soil—good fibry loam and one-seventh of manure—pressed firmly into them, and the pots plunged outside. The rim of the pots should be completely covered either in ashes or with soil in an open sunny position. When subject to this treatment very rarely do the plants give any labour in watering during the summer months, but make short, stiff, sturdy growths, varying from 9 inches to 1 foot in length, which by autumn are studded with large prominent flower buds. The plants before the end of the season are sure to root over the surface of their pots, but these can be cut off without the slightest injury to the plants. If this variety is planted out it usually grows too strongly to ripen its wood sufficiently.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. R.).—1, *Primula floribunda*; 2, *Primula poeuliformis*; 3, *Helleborus niger maximus*. (S. T.).—1, *Acacia platyptera*; 2, *Lueulia gratissima*. 3, *Azalea linearis*; 4, *Rhododendron javanicum*; 5, *Adiantum pedatum*.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Shillingstone*).—Cox's Orange Pippin. (*H. F.*).—1, Hanwell Sourcing; 2 and 3, Tower of Glamis; 4, Dutch Mignonne; 5, Betty Geeson; 6, London Pippin, highly coloured. (*W. M.*).—1, Cox's Orange Pippin; 3, Beauty of Kent; 4, Cellini; 5, Golden Pearmain; the others not recognisable. (*F. A.*).—1, Frogmore Prolific; 2, King of the Pippins; 3, Cellini; 4, Ribston Pippin; 5, Flower of Kent. (*W. S.*).—The Pear is Laure de Glymes; the Apple is not Alfriston, and we are not sure what it is; it differs from all in the Chiswick collection, and is very handsome. Do you think it is of local origin? (*F. B. R.*).—1, Lord Grosvenor; 2, Charlotte de Brouwer; 3, Huyshes's Victoria; 4, Beurre Diel. (*F. G.*).—1, Lemon Pippin; 2, Hollandbury; 3, not known; 4, Beauty of Kent; 5, Frogmore Prolific; 6, Calville St. Sauveur. Several boxes of fruit arrived without the names and addresses of the senders in them, and the letters received by post do not aid us in the identification of the consignments, therefore the fruits cannot be named. Our instructions above are clear on the point of sending fruit for identification.

* * In consequence of Dr. Hogg's absence from London fruit sent to this office cannot be named by him during the present month.

COVENT GARDEN MARKET.—NOVEMBER 6TH.

MARKET very quiet, with good supplies. Prices unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.	
Apples, $\frac{1}{2}$ sieve	2	0 to 7	0	Oranges, per 100	4 0 to 9 0	
„ Nova Scotia and	15	0	25	0	Peaches, dozen	2 0 8 0
„ Canada, per barrel	0	0	0	0	Plums, $\frac{1}{2}$ -sieve	3 0 4 6
Cherries, $\frac{1}{2}$ sieve	0	0	0	0	Red Currants, per $\frac{1}{2}$ -sieve	0 0 0 0
Grapes, per lb.	0	6	3	0	Black „	0 0 0 0
Lemons, case	10	0	15	0	St. Michael Pines, each	2 0 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	4	0 to 5	0	Lettuce, dozen	0 9 to 1 3
Asparagus, bundle ..	0	0	0	Mushrooms, punnet ..	1 6 2
Beans, Kidney, per lb.	0	2	0	Mustard & Cress, punnet	0 2 0
Beet, Red, dozen	1	0	2	Onions, bushel	3 0 4
Broccoli, bundle	0	0	0	Parsley, dozen bunches ..	2 0 3
Brussels Sprouts, $\frac{1}{2}$ sieve	1 6	2	0	Parsnips, dozen	1 0 0
Cabbage, dozen	1 6	0	0	Potatoes, per cwt.	4 0 5
Capiscums, per 100	0	0	0	„ Kidney, per cwt.	4 0 7
Carrots, bunch	0	4	0	Rhubarb, bundle	0 2 0
Cauliflowers, dozen	2	0	4	Salsify, bundle	1 0 1 6
Celery, bundle	1	0	1 3	Scorzoneria, bundle	1 6 0
Coleworts, doz. bunches ..	2	0	4	Shallots, per lb.	0 8 0
Courgettes, each	0	3	0 6	Spinach, bushel	1 0 2
Endive, dozen	1	0	0	Tomatoes, per lb.	0 4 0 6
Herbs, bunch	0	2	0	Turkeys, bunch	0 4 0
Leeks, bunch	0	2	0		

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 12 blooms ..	8	0 to 6	0	Marguerites, 12 bunches	2 0 to 6 0
Asters, per bunch, French	0	0	0	Mignonette, 12 bunches	2 0 4 0
„ doz. n. English ..	4	0	8	Myosotis or Forgetmenots	
Bouvardias, bunch ..	0	6	1 0	„ doz. bunches	2 0 4 0
Camellias, dozen blooms	2	0	5 0	Pansies, dozen bunches ..	0 0 0 0
Carnations, 12 blooms ..	1	0	2 0	Pelargoniums, 12 trusses	1 0 1 6
Chrysanthemums, dozen				„ scarlet, 12 bunches	4 0 6 0
blooms	1	0	3 0	Pinks (various) 12 bochs.	0 0 0 0
Chrysanthemums, dozen				Poppies, various, 12 bunchs	0 0 0 0
bunches	2	0	6 0	Roses (indoor), dozen ..	0 6 1 6
Clove Carnations, 12 bunchs	0	0	0 0	„ Mixed, doz. bunches	6 0 12 0
Cornflower, doz. bunches	3	0	6 0	„ Red, dozen bunches	6 0 12 0
Dahlias, dozen bunches ..	2	0	6 0	„ 12 blooms ..	0 9 1 6
Encharis, dozen ..	3	0	5 0	„ Tea, white, dozen ..	1 0 3 0
Gardenias, 12 blooms ..	3	0	5 0	„ Yellow	2 0 4 0
Gla'dioli, per bunch ..	0	6	1 6	„ French, per bunch ..	2 0 3 6
Gla'dioli brenchleyensis,				Spiraea, dozen bunches ..	0 0 0 0
dozo sprays	1	0	1 6	Stephanotis, doz. sprays	4 0 6 0
Lapageria, 12 blooms ..	1	0	2 6	Sweet Peas, doz. bunches	0 0 0 0
Lavender, dozen bunches	0	0	0 0	Sweet Sulan, „ ..	0 0 0 0
Lilium anatum, 12 blms	0	0	0 0	Tuberoses, 12 blooms ..	0 6 1 0
Lilium longiflorum, 12				Violets, dozen bunches ..	1 0 2 0
blooms	3	0	6 9	„ French, per bunch	1 6 2 6
Maidenhair Fern, doz.				„ Parme, per bunch	3 0 5 0
bunches	4	0	9 0	White Lilao, Fr., per bunch	5 0 7 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen	6	0	to	12	0	Ficus elastica, each	1	6	to	7	0
Arum Lilies, per dozen	9	0		12	0	Foliage plants, var., each	2	0		10	0
Arbutus (golden) dozen	6	0		24	0	Fuchsia, per dozen	3	0		9	0
Asters, 12 pots	3	0		6	0	Geraniums, Ivy, doz.	0	0		0	0
Begonias, various, per doz.	4	0		12	0	Hydrangea, per dozen	9	0		18	0
Balsams, per dozen	0	0		0	0	Lobelia, per dozen	0	0		0	0
Caladiums, per doz.	0	0		0	0	Marguerite Daisy, dozen	6	0		12	0
Calceolaria, per dozen	0	0		0	0	Mignonne, per dozen	0	0		0	0
Christmas Rose	0	0		0	0	Musk, per dozen	0	0		0	0
Chrysanthemums, dozen	6	0		15	0	Myrtles, dozen	6	0		12	0
Cockscomb, per dozen	0	0		0	0	Nasturtiums, per dozen	0	0		0	0
Dracena terminalis, doz.	24	0		42	0	Palms, in var., each	2	6		21	0
Dracena viridis, doz.	12	6		24	0	Pelargoniums, scarlet, 12	4	0		9	0
Erica, various, dozen	12	0		18	0	Rhodantha, per dozen	0	0		0	0
Euonymus, var., dozen	6	0		18	0	Saxifraga pyramidalis,					
Evergreens, in var., dozen	6	0		24	0	per dozen	0	0		0	0
Ferns, in variety, dozen	4	0		18	0	Solanums, per dozen	6	0		12	0



THE FLOCK IN WINTER.

SHEEP folding in winter is so important that we turn from further details of ewe management for the moment to the work of folding crones and hoggets. Crones, we may explain, are old ewes that, having ceased to be useful for breeding, were withdrawn from the flock at weaning time last June. They may then be purchased to advantage for folding if due care is taken to secure sound animals in fair healthy condition. This is not an easy matter, for crones are frequently sent to market in a terribly emaciated condition, and hardly a flock can be seen without a few worthless ewes, upon which debility or disease have so strong a hold that profit is out of the question, and loss is almost a certainty. The purchase of such "wasters" can easily be avoided by the offer of a fair price for sound animals only, all others to be withdrawn. A little firmness and tact must be brought to bear upon this transaction, for cattle dealers almost invariably make up flocks for sale, enough really fine sheep being put in to attract the eye and take off attention from the inferior ones, which are certain to be present in considerable numbers. If there are enough sound healthy sheep to render an offer desirable they are generally to be had by giving a trifle more per head for the privilege of selection.

Preference is given to crones for folding because they enrich the soil more thoroughly than younger sheep, but we do not mind whether it is hoggets or crones so that they are healthy. Old neglected pasture may be reclaimed by a clearance of all tall-growing weeds, such as Thistles, Nettles, Docks, Broom, Ononis, Gorse, and Brambles, and following with folds, using a hurdle to a sheep, which determines the size of the fold, and turning into a new fold every twenty-four or forty-eight hours, according to weather and condition of the pasture. The folding may be repeated advantageously with certain modifications every winter, and there will be both vigorous growth and better herbage—many of the smaller weeds will disappear, to be replaced by really useful growth. The manner in which the sheep are fed in the folds is very much a question of expediency. A mixed dietary is undoubtedly best, and it may consist of crushed corn from a half to a pound mixed with hay chaff in the troughs, pea or oat straw in racks, and sliced roots also in the troughs at the rate of about 20 lbs. daily. Oats, Barley, Wheat, Peas, and Beans are all good for sheep, and there is very little difference in the results from the use of any particular sort of corn. Last winter large quantities of Barley were used for hoggets simply because the grain was discoloured and the price so low that it answered better to use it for feeding purposes at home than to dispose of it to the maltsters. This season the Barley trade is altogether better, and it will answer better to use Oats and pulse for the sheep. The Woburn trials prove beyond a doubt that Wheat may be used to advantage for sheep, and it would be well to turn inferior samples to account for the purpose; but fine, bold, dry samples will continue to find a profitable market among the millers, no matter how prices may fluctuate.

Silage on many farms will commend itself for our purpose as a valuable addition to the dietary either used alone or mixed with chopped straw. The use of mixed food is so beneficial that every wholesome change is desirable. A change of quarters, too, is often productive of good, and it can often be managed for the sheep by having folds on Turnips as well as on pasture at the same time. Then if the weather is dry and open good progress may be made among the Turnips; if wet, then the sheep may be withdrawn to pasture. If kept persistently in Turnip folds, in very wet weather,

even hoggets do not make satisfactory progress; foot rot is apt to spread too, and that always lowers the condition.

The feeding of hoggets in folds also depends upon when they are required to go out for sale—forward hoggets having a full quantity of corn, and backward hoggets a lesser quantity of corn, with more of other food. The use of linseed or compound cakes for hoggets or crones is entirely an open question. If corn is cheapest, and it answers as well, of course it will have preference, but under certain local conditions, such as contiguity to a cake mill, and avoidance of cost of carriage and middlemen's profits, cake may be used. But for farmers generally, home grown corn, or corn purchased at low wholesale rates, answers best. Whatever food is used it must be sweet, fresh, and wholesome, only enough being used each time for the sheep to clear up, with, perhaps, the exception of straw in racks, to which they should always have access in winter folds.

(To be continued.)

WORK ON THE HOME FARM.

Very little progress has been made with the Wheat sowing, except on light land farms, where a few hours' fine weather is all that is required to render the surface dry enough for the drill. Glad indeed have we reason to be that we began sowing our heavy land early in September, for we have now an excellent full plant. But without such promptitude and timely sowing we might have now to wait indefinitely. This statement affords no help or comfort to those heavy land farmers who have fallen behind with their work, but we mention it simply to apply a useful lesson for the future guidance of our readers.

The incessant rain has done much more harm than retard Wheat sowing, for it has spoilt thousands of pounds worth of Clover seed. This at best is a speculative crop, but the risk sinks to a minimum if the first growth of the layer is fed off by sheep, and then the second growth comes to maturity soon enough for the seed to ripen before the weather becomes much broken, and the seed is saved. That is precisely what has happened this year, and it is where the first crop was mown for stover that the second growth reserved for seed has been spoilt. We regret this all the more because the seed was so abundant, especially in the later heads. We deplore the serious loss greatly, although it is probably confined to the seed-growing district of East Anglia. We know a farmer who managed to save half the crop, when down came the rain day after day, so that the remainder had to be carted off the land to the cattle yards. Another declares his loss amounts to full £300, which sum would have been all to the good at the end of the year.

A severe case of swine fever has been traced to its source, and it was found that it had been spread from farm to farm by sows driven from the one farm where the fever originated. No doubt the filthy condition in which swine are kept so generally renders them predisposed to contagion, and we can only repeat previous advice to keep pigs in as cleanly a condition as all other animals. All compact plump porkers may be disposed of now quickly as Londoners, but those with larger frames answer best if kept for "jointers." None of them should be fed carclessly, but each class of pig should be pushed on and ripened for market as quickly as possible with home grown corn.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. October and November.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
											Inches.	
Sunday	27	29.689	44.6	44.3	N.E.	47.2	54.3	43.1	55.0	41.2	0.189	
Monday	28	29.772	46.8	46.8	N.E.	47.3	52.9	43.5	64.7	35.4		
Tuesday	29	29.919	44.0	48.0	E.	49.4	51.1	46.4	57.8	46.2	0.070	
Wednesday	30	29.947	48.4	46.9	S.	48.7	57.3	45.4	84.9	39.9	0.198	
Thursday	31	29.957	43.8	42.2	W.	44.4	53.0	42.1	85.9	37.9	0.052	
Friday	1	29.615	50.0	48.9	S.	47.0	55.7	43.8	88.4	36.9	0.028	
Saturday	2	29.915	42.2	40.6	S.W.	45.2	51.8	38.1	86.2	31.7	0.068	
		29.820	46.3	45.4		47.6	54.2	43.2	74.7	38.5	0.545	

REMARKS.

- 27th.—Very wet from 4 A.M. to 2 P.M., and dull and damp after.
 28th.—Damp and foggy early, and occasional spots of rain throughout the day.
 29th.—Fog early; dull day, with occasional spots of rain.
 30th.—Bright pleasant day, rain at night.
 31st.—Rain in small hours; bright pleasant day.
 1st.—Wet from 7 to 10 A.M., then bright and mild.
 2nd.—Bright and fine.

Although rain was recorded on six days, much of it fell at night, and there were four pleasant sunny days. Temperature about the average, with little range.—G. J. SIMONS



KEEPING GRAPES.

THE most critical period for keeping Grapes on Vines that have their roots outside in unprotected borders, is from the time the foliage commences to assume an autumnal appearance until it falls, as the berries are more liable to decay at this stage than at any other. The main evils that the cultivator has to contend against are late ripening, overcrowding of the berries, large shouldered bunches, and an injudicious use of fire heat while the Grapes hang on the Vines.

We are convinced that Grapes expected to keep well without the loss of a berry should be thoroughly ripe by the middle of September at the latest. It is important that the Vines have rather a long period of growth; they should be started early in the season and assisted by heat, so that when colouring commences they can be allowed abundance of time in which to ripen. During August there is generally plenty of sunshine, and a moderately warm, dry, and airy atmosphere can be readily maintained. Warmth and ventilation at night in addition are the conditions under which the Grapes will develop superior flavour to those that ripened in a high temperature and close moist atmosphere six weeks or two months later in the year.

Attention is needed at the time of thinning or before the stoning commences. It may surprise some when we say that we go over our late Grapes three times before the process of thinning is completed. First, all small berries are removed, and sufficient to prevent crowding until the remainder have commenced swelling freely. The second time does not take long, when all inside berries are removed, and as nearly as we can judge the process is completed. During this second thinning shoulders that are liable to hang or press in any way against the remainder of the bunch when bottled are removed or reduced as required. Where any crowding results from one portion of the bunch pressing against the other the berries are most liable to decay. The same weight of Grapes can be taken from the Vines whether the bunches are large or small, and from careful observations during the past thirteen years we have found that bunches ranging from 1 lb. to 1½ lb. keep better than those of a larger size. Larger bunches can be kept equally well if they are tapering, long instead of wide, where the inside berries can be removed, and there is no pressure from above. Bunches that are short, thick, and heavy at the top are avoided as much as possible.

The third time the bunches are examined is after the berries are stoned. It can then be determined if any are likely to press unduly against others. In some bunches not a single berry may need removing, whilst in others the berries may display signs of swelling to an extra size when it may be necessary to remove one here and there. Whether thinning is done at one or three times matters very little provided the Grapes have room to swell and when ripe are not crowded. Bunches in which the berries are jammed together will not keep satisfactorily. What use are bunches 4 or 5 lbs. in weight if there is a doubt about keeping them, or if in the end they are much reduced in weight by the removal of decayed berries? It is much wiser to have two or three bunches on the Vines that will keep instead of one. Large bunches certainly take the eye, and are something to boast about, but for all practical purposes those of a smaller size are much more useful, and more suitable for market purposes. It is not too late even now to

improve under-thinned bunches. It is better to remove a few berries at once than allow them to remain and eventually decay and probably disfigure the whole bunch. The removal of one berry at the present time may prevent the loss of two or three later on, for if one turns mouldy the adjoining two or three are almost certain to decay as well, thus causing a considerable vacancy in the bunch.

We have found it a good practice to admit more light to the Grapes that have to be kept until the spring than is necessary for those that are used from the Vines by the close of November. When the Grapes are coloured we commence removing the sub-laterals a few at a time until all can be cut away without fear of the main buds bursting again into growth. By the end of September, or early in the following month, only the chief leaves along the laterals remain. Not only is light admitted to the Grapes but to the wood to further ripen and solidify it. It is also a fact that Grapes keep better on wood that is firm and well matured than they do on strong, soft, pithy, unripe wood.

Early ripening of the Grapes not only proves an advantage in keeping the fruit, but it is the most economical as regards the consumption of fuel, a matter of no small moment at the present time. Leaving out the question of economy, however, the Vines can be subjected to cool treatment much earlier than would otherwise be the case. This tends largely to reduce to a minimum the risk of losing berries during the period when the foliage commences to decay. The atmosphere externally is often heavily charged with moisture, and the continuance of fire heat only adds to the evil. When fire heat is used at this stage it is difficult to keep the berries from being covered with moisture, a condition that is almost certain to end in large numbers decaying. If the ventilators are closed and fire heat used when the atmosphere is moist outside, or heat and ventilation employed together, the atmosphere about the Grapes is very similar in both cases as far as a deposit on the berries is concerned. The best course is to use as little fire heat as possible after the Vines have once been gradually brought to cool treatment, and then principally on very fine days when liberal ventilation can be given. A slight deposit on the berries appears, however, to do no harm when the temperature is low, provided it be quickly evaporated, but when the temperature is higher and moisture settles upon the berries decay quickly commences. Heat and the condition of the atmosphere not only aid rapid decomposition, which is much quicker in late than early ripened Grapes, but it tends largely to shrivel the berries. Alnwick Seedling, for example, cannot endure fire heat after it is ripe. The berries quickly commence shrivelling where fire heat is used daily and the orthodox ventilation provided until the Grapes are cut and bottled, or the foliage has fallen. We have watched this variety closely during the past two years, and find that it keeps plump much longer than when we used more fire heat to our late Grapes.

The greatest difficulty after the Grapes are ready for removal from the Vines, in most gardens, is to find a suitable place in which to store them. Fruit rooms are often selected, and large numbers of these are anything but suitable. A room, whether in a northern or southern position, that is naturally dry, where a good circulation of air can be maintained will do very well. A free circulation of air is important, and where it can be secured all means of heating can be dispensed with. When we used the ordinary fireplace in our room, or the two gas jets provided for maintaining a uniform temperature, the Grapes did not keep nearly so well as they have since their use was discontinued. Warmth during severe weather resulted in the berries being covered with dew in the morning, and for days together we had the greatest difficulty in dispelling it, with the result that the berries decayed rapidly. When the fire was used a circulation of air was cut off, and the moment the door or window was opened and air admitted the Grapes were almost white with the moisture

deposited upon them. When ordinary wine bottles are filled with water and suspended in a cool room they will need no attention in refilling, except the few in which those are placed that have very short laterals. These should all be arranged together, so that they can be looked over occasionally to keep the stems in the water. No charcoal need be placed in the bottles, this practice is a waste of time, the neck of the bottle need not be stopped with clay or any other material, and the ends of the shoot need not be sealed or even charred. These are superfluities, and should not be taken into consideration, all that is required is to cut the bunches from the Vines with the laterals attached and place them in the bottles of water. If the room is ventilated liberally on all favourable occasions few berries will be lost if the Grapes have been well ripened and liberally thinned. When they are kept in a cool room they retain their bloom and colour to the last, and their flavour as far as we have been able to judge is not impaired in the least. Last April our Alicantes in appearance and flavour were as good as when they were cut from the Vines. When fire heat was used after bottling they gradually lost their colour and flavour in a marked degree.

The Grapes from late Vines where the fruit is intended for use during the months of March, April and later, may be cut from the middle to the end of December. The fruit intended for use during the months of December, January and February may be removed, and the Vines given a chance to rest directly the foliage has fallen naturally.—WM. BARDNEY.

AUTUMN WORK AMONGST GLADIOLI.

THERE are three subjects which will much interest the growers of Gladioli at this season of the year:—1, The lifting and storing of corms; 2, the preparation of the ground for next spring planting; and 3, the adding to the collection of newer sorts which have proved valuable additions, and on each of these subjects I may say something from my own experience of thirty years or more of their culture. Of course, I am alluding to the hybrids of *gandavensis*. I have grown for some years some of Lemoine's hybrids of *purpureo-auratus*, which are increasing in size and beauty every year, a white one having been obtained in Venus de Milo. I have found them in this part of England (Kent) to be perfectly hardy; and it should be borne in mind that although we are in the Garden of England, and so far to the south, yet we are subject to very sharp frosts. My corms have been left in the ground for six years, and have not only not suffered but largely increased. This will probably satisfy your correspondent, "W. J. M.;" in fact, I cannot suppose that there is any part of Ireland where they would not be perfectly hardy. Mr. W. E. Gumbleton grows them in Cork to great perfection, and with him they are perfectly hardy. True that is a favoured locality, but I should think it is equally true with other parts of the country. The hybrids of *nanus* I cultivate in pots, so that I have now to do with those of *gandavensis* only.

This season is rather a puzzling one. What we want in October is what they generally have at Fontainebleau, a dry and sunny month; instead of that we have had up to October 28th more than seven inches of rain; the ground was saturated, and there was a great difficulty about lifting and harvesting the corms. It is well known that there are certain times for the flowering, and I think the time for lifting the corms may be regulated accordingly. The dry month of September greatly facilitated the ripening of the corms, a process which the wet October has considerably hampered. I have taken up a few of the very earliest, such as Shakespeare, Adolphe Brogniart, but the greater portion will have to remain, so that I shall be in no hurry about them, for if they are harvested by the end of November I shall be satisfied. There is one thing, however, about which care will have to be taken; the beds are now so thoroughly wet and the corms so full of moisture that if frost should come they will have to be protected by long litter thrown over them. I still adhere to the plan of storing them that I have for some years advocated—viz., to clear off all the earth which is dry enough, where it is considered advisable to rub off the spawn and store it away in bags, although I would strongly urge, except in the case of the newer and more expensive kinds, that it is not worth while to take the trouble, as they can be obtained now at so cheap a rate, and instead of having to wait for two or three years for your plants to flower you obtain flowering roots at once. Having cleared away the old corm and made the new one generally tidy, I then place them in my lattice frame where they are well

exposed to the light and air, first of all writing the name on each, so that if they get out of their place they will not create confusion. I bring the stand into the dwelling house, where it is free from the influence of frost, and where I can have an occasional look at them during the winter. With regard to the question of leaving them in the ground, I cannot recommend it. I have tried it more than once, and have always failed, and yet I have some coming up in the most vigorous style in my Rose garden, where I grew them ten or twelve years ago, these being evidently from spawn which has remained in the ground all that time. One corm has thrown up four strong flowering stems, yet with all this I should be very sorry to try to leave them in the ground.

With regard to the preparation of the ground for planting, it will be somewhat of a difficulty with me this year owing to our excessive rainfall, and the consequently sodden condition of the ground, but it must be done as soon as possible. After trying various parts of the garden I have chosen a piece where the soil is somewhat stiffer than the rest, and here I have a space sufficient for four beds, two of them I use each year, and this is the only change I can give them. The beds I have used this year will be planted with Potatoes or other vegetables, while those to be planted in spring have been this year occupied by vegetables. I believe it is still better to leave the ground intended for next year's planting fallow, but unfortunately I have not space enough to do this, so I must only do the best I can.

One important matter will occupy the mind of the grower, and that is the improvement of his collection by new varieties, for the improvement that is taking place is so very great that many of the choicest varieties of former days are shelved by others of the same colour. Thus Norma used to be considered the best of the whites, and is still a pretty flower, but it has been supplanted by Enchanteresse, a flower double its size, and of excellent quality. Meyerbeer, which is still an exhibition flower, has a very successful rival in Grande Rouge, very similar to it in colour, but much larger, and so with many others; in fact, we are now getting a length of spike and size of flower which were undreamt of in former days.

I have had this year the opportunity of growing seedling varieties from four different sources. I met at the Crystal Palace in 1888 an American nurseryman who kindly offered to send me some of the new American varieties. In due course I received a dozen fine corms, but I am sorry to say that I found nothing of any moment amongst them; they were deficient in form and length of spike, and although one or two varieties were curious in colouring, yet they were so angular in shape that it was impossible to regard them as worth keeping, and they have now gone into mixtures. The other three sources were Messrs. Souillard and Brunelet of Fontainebleau, Mr. Kelway of Langport, and Mr. Burrell of Cambridge. Mr. Kelway sent out as usual a number of new varieties which had been certificated in various places, but I do not know enough to be able to say anything about them. I have grown some of those sent out in 1886, but I have not grown any of the more recent ones. He has been successfully exhibiting his flowers in Paris, so I have no doubt they were good, and amongst the varieties of 1886 there are unquestionably some pretty sorts.

Of Mr. Burrell's seedlings I know more, and am quite convinced that he is raising some most valuable varieties, and although they have not been announced in his catalogue, that does not detract from their excellence. The truth is, I suppose, that bringing out seedling varieties of the Gladiolus is not a very paying concern, and Mr. Burrell is somewhat fastidious. He does not like to bring forward anything that is not thoroughly good. I have grown some of his for the last two years, and think that amongst them the following may be noted as really good:—

Cygnets.—A creamy white flower of good size and substance, and giving a good spike.

The Mikado.—A brilliant scarlet flower with white spot and carmine feather.

Avalanche.—A pure white with long spike of large flowers, opening very much at the same time.

Snowdon.—I have not seen Souchet's Mont Blanc, and this is by far the finest white Gladiolus I have seen; the flowers are very large, and it was exhibited at Shrewsbury with twenty blooms out on it.

Mrs. Lindsell.—A flower much in the style of Orphée, but larger and very brightly marked.

Dorothy and Pleasance are also good flowers, while several of the selected seedlings of last year promise to make good flowers. I now come to the French varieties, of which I have had none later than those sent out in the autumn of 1887, and of them I think the following a correct account:—

Arrière Garde.—A late blooming variety; plant is strong and forms a good long spike of salmon rose flowers, largely flamed with slaty violet, white spots.

Cendrillon.—A long spike of flowers closely set together;

flowers large, although somewhat angular in form, bluish white, largely flushed and striped with rosy carmine; very vigorous and curious looking, late blooming.

Enchanteresse.—Sent out in 1886; a very fine white flower of large size and substance, and of good form; a very remarkable flower.

Gregoire.—Large flowers, largely lined and striped with carmine on a white ground, large and rich carmine spots; a very effective flower.

Formosa.—An early flowering variety, holding itself well; tender rose flesh and satiny looking, slightly striped with orange on the border of the petals.

Docteur Bailly.—Long and fine spike of large flowers, brilliant scarlet with a small carmine spot on a white ground.

Jubilée.—Large carmine flowers, opening all its flowers nearly at the same time, flowers often coming semi-double.

Panama.—Long spike of large flowers, beautifully set, intense rosy carmine, striped and shaded with bright scarlet.

Picador.—Long and regular spike of scarlet flowers, pure white spot; plant of fine effect.

Aurore de Feu.—Brilliant spike of bright rose coloured flowers with centre yellow, and of a very peculiar colour; very distinct.—*D., Deal.*

OPEN QUARTERS FOR VEGETABLES.

It has long been my opinion that the value of garden walls, as regards the shelter they afford to the vegetable quarters enclosed by them, has been greatly overrated, and every season fresh observations in various parts of the country still further convince me that there is much less need for them than is generally thought to be the case. If they were absolutely indispensable for the production of choice hardy fruit, and more especially Pears, Peaches, Plums, Apricots, and Cherries, there would yet be a strong argument in favour of the erection of the orthodox high garden walls; but it has repeatedly been demonstrated with how much greater certainty very superior fruit can be grown in cheaply constructed glazed houses, and there is therefore no need for me to emphasise the point. A garden wall to be of real service ought to be substantially built, and not much under 12 feet in height, and such proves somewhat expensive. In some districts, and by good management, the garden walls are well furnished with profitable fruit trees, and in some instances they may be of good service in protecting and forwarding vegetable crops located near them. As a rule, however, vegetables can be had quite as early in the open, always provided a suitable site is selected for them. Take Peas for instance. Grown near a sunny wall they apparently soon surpass any that may have been sown at the same time in a sunny open spot, but in the end the latter can be gathered from quite as early as those presumably more favoured, and are quite as productive without being nearly so tall. I have repeatedly attempted to obtain Peas from borders sheltered by high walls earlier than friends from the open fields in Essex, but never succeeded in doing so unless recourse was had to raising the plants under glass and other coddling measures. Shelter favours the growth of haulm rather than the crops, and varieties that under garden culture attain a height of not less than 4 feet rarely exceed 2 feet in the open fields. In few instances do the former have the advantage in the number of pods produced, and if they happen to be somewhat longer they are not always so well filled. The later rows of Peas in much sheltered gardens are very liable to be overrun by mildew, but if grown in an open position and given good room they are far more healthy and productive. Much of the foregoing also applies to Runner Beans, the plants grown in the open fields being in full bearing long before the majority of the rows in private gardens are largely gathered from, and it is only in open positions that the plan of growing the Beans without stakes answers well, richness of soil and shelter combined causing the growth of too much haulm. Kidney Beans again, if well exposed to the light and air, are wonderfully sturdy and productive. Some idea of the productiveness of Beans as grown in the open fields may be gained by sowing a single row on the ridges between the Celery trenches—a plan also much in vogue with the market growers, who annually send many tons of pods to the markets as well as to pickle manufacturers.

It is not poverty of soil, or the use of a comparatively small amount of manure that is responsible for the sturdy growth in the case of the various crops grown in the open plots of ground, as in many instances the market growers are extremely liberal with solid manure, wonderfully so in fact, the quality of this manure being also superior to much that private gardeners have to be content with. Cauliflowers in the open heart in quickly, and so also do Cabbages and Lettuces; and other crops are similarly precocious, being yet of full size and excellent quality. When any of these are found to be tough or strongly flavoured it is either the

fault of the cook, or it is owing to their being too long exposed in the markets and shops. To further strengthen my argument in favour of more open quarters for the ordinary occupants of the kitchen garden I would also mention the fact of having once served a gentleman who could always detect whether the Strawberries sent to the dining table were gathered from the plants in his private gardens, or were obtained from the open fields rented from him. The latter were invariably superior, the varieties being the same, to anything I could grow in the garden, and we were never successful in producing nearly such heavy crops as emanated from the sturdy plants in the open fields. Some of the best Potatoes I have ever tasted were bought from an Essex farmer, who manured the ground very heavily (it was put on steaming hot) at planting time, and very heavy crops were lifted. This season I noted how much better the Potatoes in the open fields withstood disease than did ours between walls and a hedge, the haulm of the former being quite green after ours was dead. Even Asparagus, which is supposed to require shelter from high winds, is no more liable to be twisted about and injured in a walled-in garden than in the open, the former really standing more in need of staking than the more sturdy plants grown without other shelter than they afford each other. Ridge Cucumbers and Vegetable Marrows if lightly sheltered at the outset are much the most productive in the open fields sloping southwards, and almost any kind of vegetable can be grown successfully in these positions.

As regards hardiness, the superiority of the crops grown in the open fields must be admitted. Not unfrequently the whole of the Broccoli in walled-in kitchen gardens are destroyed by frosts, while the bulk of the plants grown in the open fields escape with a severe "shaking" only. The former are usually too long in the stem to be hardy, this being the most vital part of the plant. Those in the open fields are certainly given more room than many private growers think necessary, but from the seed bed till fully grown they are very sturdy, the stems being eventually well protected by the leaves. Prior to the introduction of superior forms of Brussels Sprouts the plants grown in the majority of kitchen gardens were by no means generally productive, but our market-growing friends could point to many acres of the Old Imported, or any form supplied to them as such, that would equal anything to be seen at the present day. Plenty of light and air and a firm root run favoured a sturdy productive growth, and in those days exceptionally profitable crops were obtained. The breadths of vegetable crops generally growing in the open fields usually present a remarkably even appearance, and in nearly every instance a marked absence of superfluous leaf growth is noticeable. If, therefore, I have proved my case, those who are about to form a new kitchen garden ought not to be in too great a hurry in building garden walls, while those who possess them already should not attribute too much to the shelter they have afforded the vegetable crops within their influence.—W. JGGULDEN.



THE CHISWICK CENTENARY CONFERENCE.

CERTIFICATES of merit were awarded to the following new varieties of Chrysanthemums at the Conference on November 5th and 6th:—

NEW VARIETIES.

Aurora (single), Etoile de Lyon (Japanese), M. E. A. Carrière (Japanese), Bombardier (decorative), Souvenir de Londres (single), Mons. Bernard (Japanese), Miss M. A. Haggis (incurved), Violet Tomlin (incurved), and Lune Fleuri (Pompon), from Messrs. H. Cannell & Son. Thomas Stephenson (Japanese), Mrs. Judge Benediet (Ancmonce), Rose Owen (single), Lily Owen (single), and Lune Fleuri (Pompon), from Mr. R. Owen. Alice Stevens (Pompon), and Violet Tomlin (incurved), from Mr. G. Stevens. Mrs. Alpheus Harly (Japanese), from Mr. T. S. Warc. Mrs. F. Jameson (Japanese), Mons. Bernard (Japanese), Etoile de Lyon (Japanese), Admiral Symonds (single), Edie (single), Violet Tomlin (incurved), Miss M. A. Haggis (incurved), James Weston (Japanese Ancmonce), and Souvenir de Londres (single), from Mr. E. Molyneux. Stanstead White (Japanese), and Mrs. F. Jameson (Japanese), from Mr. R. F. Jameson. Annie Clibran (Japanese), L'Automne (Japanese), and Thomas Stephenson (Japanese), from Messrs. Clibran & Son.

ESTABLISHED VARIETIES.

Incurved.—Golden Empress, Golden Queen of England, John Salter, Alfred Salter, Lord Alcester, Princess of Wales, Mrs. W. Shipman, Queen of England, and Empress of India from Mr. E. Molyneux. Mr.

Brunlees from Mr. E. Berry. Lord Wolseley and Hero of Stoke Newington from Mr. Wildsmith. Barbara, from Mr. C. J. Salter.

Japanese.—Edwin Molyneux, Madame C. Audiguer, Sunflower, Jeanne Délaux, Mlle. Lacroix, and Madame Laing, from Mr. E. Molyneux. L'Adorable, M. Astorg, M. Freeman, from Mr. C. J. Salter. Japonais, Criterion, Thunberg, and Bertha Flight, from Mr. Wills.

Japanese Anemone.—Fabian de Mediana from Mr. C. J. Salter. Souvenir de Madame Blandinières and Jeanne Marty from Messrs. Paul & Son.

Show Anemone.—J. Thorp, jun., from Mr. R. Parker; Fleur de Marie, Empress, and Nelson from Mr. E. Molyneux.

Pompon.—Mlle. Elise Dordan, Toussaint Maurissott and Mlle. Marthe from Mr. C. J. Salter; Prince of Orange, Cendrillon, Marabout, Nelly Rainford, Black Douglas, Eleonore and Rosinante from Mr. C. Gibson.

Anemone Pompon.—Briolis, Regulus and Antonius from Mr. E. Molyneux; Astrea, Madame Grutien and Calliope from Mr. C. J. Salter; Val d'Andorre and Roi de Japonais from Mr. G. Barnett.

Japanese reflected.—Elaine from Mr. J. Doughty; Maiden's Blush from Mr. E. Berry.

Japanese.—Ralph Brocklebank from Mr. W. Wildsmith; Belle Paule and Boule d'Or from Mr. Jameson; Avalanche from Mr. Fyfe.

Reflected.—Phidias and Mr. Forsyth from Mr. E. Molyneux; King of the Crimson, William Earley and Mrs. Mayes from Mr. C. J. Salter; Cloth of Gold and Chevalier Damage from Mr. W. Wildsmith.

Anemone, large.—Miss Annie Lowe, Gluck, Lady Margaret, Grand d'Alvéole and La Marguerite from Mr. C. J. Salter.

APPLIANCES.

Certificates of merit were granted to Mr. F. Jameson for spring cup raisers and nare holder; to Mr. Harland for a cup raiser.

CONFERENCE PAPERS.

UNDOUBTEDLY the chief feature of the Chiswick Conference last week was the reading of papers. Mr. Haywood's presidential address was in every respect admirable, but the author was unable to deliver it in consequence of a throat affection, but it was effectively read by Mr. Wilks, who also made himself distinctly heard throughout the great vinery in reading Mr. Harman Payne's able, yet necessarily condensed history of the flower. Mr. Molyneux gave his estimate of new varieties, and grouped them into first and second class sections. Mr. Wright and Mr. Shirley Hibberd followed, the first day's proceedings terminating with a vote of thanks agreeably proposed by Dr. Masters to the chairman and readers of the papers. On the second day Mr. Hemsley discoursed learnedly on species of Chrysanthemums, Mr. F. W. Burbridge exhaustively on seeds and seedlings, and Messrs. C. Orchard, C. Pearson, and W. Piercy practically and ably on dwarfing and grouping Chrysanthemums, market Chrysanthemums, and summer Chrysanthemums respectively, Mr. Shirley Hibberd presiding. There was unfortunately no discussion. The papers were, perhaps, fully too long, and a synopsis of them is necessary for distributing through a meeting for purposes of discussion. We have only received transcripts of two of them, which follow. There was a large attendance. The papers will be published in the Journal of the Royal Horticultural Society, which will be sent to Fellows of the Society who desire to have copies.

PROGRESS IN CHRYSANTHEMUMS.

MR. SHIRLEY HIBBERD'S paper given in the Conference under the above somewhat vague title, treated of the evolution of the flower as illustrated in its development in European gardens in the last 100 years. He said a flower of this kind was removed by man as far as possible from natural influences, and the direction of its development was in great part determined by the cultivator's taste. It was especially worthy of observation in entering upon the subject that we did not, as makers of the flower, begin with the wild forms that man had not till then touched; but we began with an old favourite of the gardens of China, the Corea and Japan, and not only so, but all the several types of reflected, incurved, Japanese, and Anemone flowers were established in the east ages before the west knew of their existence. Many fine varieties that would not be classed as Japanese were obtained from China in the early days of the present century, and there was no evidence to be found in the history of the occurrence of a new type as the result of European cultivation. Comparing early with late flowers, however, the differences were enormous; all the early kinds were rough and wanting in dignity as compared with those that had found favour in Europe in the last fifty years.

The multiplicity of types and styles was advantageous as affording scope for the exercise of a variety of tastes. When the Japs were coming in like a flood in the days of Mr. Salter, the London florists objected to them on the ground of their extravagant departure from the code of properties that then prevailed, being so enamoured of the incurved flowers as to need time to discover beauty in the new comers. But a school of florists in the south of France hailed the innovation with joy, and Frenchmen who had failed to find in the incurved flowers the properties that pleased them took to the Japs, and quickly produced a magnificent series of new varieties, the effect of which on the mind of Europe was to establish the Chrysanthemum in the highest degree of popularity as a florist's flower. The men were in each case better than the schools that owned them, and they learned to perceive in each other's special favourites rights to divide honours with their own.

Regarding the dark reflexed Kiku, figured in "B. M." 327, as the

first of its group, it would be found that Involutum, or Curled Lilac, figured by Sweet, 1823, might be regarded as the first proper incurved flower. The first of the Japs was undoubtedly the quilled flamed yellow, introduced from China by Captain Drummond for the Horticultural Society in the year 1820. A number of examples were given of Anemones, Anemone Pompons, and Liliputians, and the structure of the flower was explained with special reference to the organs of reproduction. Beginning, then, with the types ready formed, it will be seen that the European florists have in less than a hundred years accomplished more for the flowers than the Chinese cultivators in the thousands of years during which they profess to have regarded it as a favourite. They had a circle to begin with as in the case of any asteraceous flower, but out of this simple form they had evolved infinite variety, for while a perfect incurved flower differed so greatly from a fantastic Jap, the same fundamental lines were traceable in both, were essential to both, and the variations consisted in added adornments. But geographical influences co-operate with diversity of tastes in the fashioning of the flower. The general tendency of taste in raising and selecting is to sterilise it, and the incurved represent the most completely sterilised form; while the Anemone centred is a form in which fertile florets occur not by accident, but as an integral part of the true model. The Corea is a cold country, and Japan is a cold country, and their climates had contributed to the sterilisation which, in the case of the incurved had been completed by British cultivators. Indeed this, the most perfect, the most satisfying, and the most exacting of all forms of the flower known to us, is really a cold climate form, as our friends in the south of France discovered in its refusal to be managed by them; while on the other hand the Japanese type in their hands became as a new creation. These facts are of vital importance in the study of the making of this grandest of all florists' flowers. If we are to have new forms, we must have fertile flowers to begin with; and we must cease to disbud, give no preference to this or that bud, allow the plant to show its flowers, and as the climate is too cold for seeding, we must make a climate for the purpose. English cultivators have hoped for seed from incurved flowers of the noblest forms and proportions, in accordance with the Shakespearean motto, "From fairest flowers we desire increase," but a first-class incurved flower was as incapable of producing seed as the bud that never opened.

But we are not entirely dependant on seed for new varieties, for this is a sportive plant, and a considerable proportion of our gains in new varieties have been by means independent of the cultivator who has only had to keep what Nature gave him without his asking. Sports were probably of seminal origin; in other words, they represented the parentage on one side or farther back than the immediate progenitors, and the occurrence of the sports that appeared to be identical at different places at the same time seemed to prove that the quality newly exhibited in the sport was an inheritance, and of strictly seminal origin.

Looking to the future, Mr. Hibberd discussed at some length the developments that might be anticipated. Referring to a figure in the "Keramic Arts of Japan," and to one of the customary blue Chrysanthemums on a Japanese Cloisonné jar that he placed upon the table, he said we might hope for a much nearer approach to blue and to red than any flowers had as yet shown, but it was unlikely and perhaps undesirable that high positive tones of blue or scarlet should appear. We may hope for more blue and more red, and for the full development of an agreeable odour. The asteraceous order is characterised by the production of aromatic principles that often are far from pleasant, and our favourite is given to the manufacture of an odour that reminds one of Camomiles. But a very trifling variation in the constituents of aromatic substances would often make all the difference between odours that create disgust or that give delight, and there were a few examples of pleasantly scented mums to encourage us. We had gone forward in the development of form, but we should have to go backward to obtain anything like a new departure, for all our forward work tends directly to sterilise the flower and to bar all further progress.

JUDGING CHRYSANTHEMUMS.

MEN AND METHODS.

MR. WRIGHT in his paper first treated on men and the qualifications as judges, then indicated the merits and demerits of groups and specimen plants; and, lastly, dwelt on methods of procedure and the properties of blooms. He said: A season seldom, if ever, passed without the qualifications of persons who are appointed to officiate as judges at the chief Chrysanthemum shows being questioned by writers in the gardening press. To that he had not the slightest objection, as honest criticism was wholesome in taking conceit out of men, and putting them on their mettle in the work they undertake. He went on to ask—Who are the objectors, and what is their experience? Who are the judges, and what are their credentials? Who are those who make the appointments, and what are their qualifications? And answered those questions in a somewhat trenchant way.

Proceeding, he remarked that, apart from technical knowledge, a judge must be absolutely without sympathy at a critical moment. Whether he knows to whom the plants or blooms belong or not, he must seal his soul against all feeling in favour of a particular man. If there be one point against the products of his friend or neighbour he must give it against him as if he were an enemy. Judges, he said, had nothing whatever to do with exhibitors, but only with exhibits. This was one of the hardest lessons that local judges at local shows had to learn, and he related some experiences bearing on this matter, con-

cluding this portion of his paper by saying he was all in favour of the training of young men for the important work in question, "but they must be men of intelligence and high character; of the strictest probity, absolute impartiality, and who can completely banish from their minds all thoughts of individuals, and concentrate their whole attention on the produce before them, with the object of doing strict justice to all. They must be prepared to incur displeasure and even abuse; but if they act honestly and make few or no mistakes, the opposition of disappointed men will be lightly regarded, and instead of its having a weakening will have a strengthening effect on them as adjudicators."

Turning to methods of judging, he said, generally speaking, and for practical purposes there were three distinct forms of exhibits in a Chrysanthemum show:—Groups of plants arranged for effect; trained specimen plants; cut blooms arranged in stands. What was said on the merits and defects of groups can only be epitomised here:—"High quality blooms, fresh bold foliage, no unsightly stakes and stems, with freedom in arrangement, and pot exposure reduced to a minimum, are the chief factors in a first-rate group of Chrysanthemums, and in proportion as they are represented so will the prizes be awarded."

He next passed to trained specimen plants, and said that in no other form was high culture with skilful manipulation better displayed than in the production of the best examples. But many were faulty in training. In alluding to good exhibits at different shows the following tribute was paid to a successful grower:—"I am sure all here who were acquainted with the late Mr. W. Hall of Brixton would if they could scatter over his grave a few of the flowers which he loved and grew so well. His grave is in the deep waters, but his gentleness of spirit, kindness of heart, devotedness to his calling, and skill as a grower of specimen Chrysanthemums, will not die while those who knew him best and the excellence of his work, live to labour in the floral world. When he exhibited a few years ago his were model plants—not widely spread out as if to say, 'look how big I am,' but massive in stems, leaves, and blooms—compact without being huddled, and in which Art and Nature were so merged that there was not visible line of conflict between them. Not a twisted stem could be seen in those beautiful specimens, about 2 feet high, and bearing from eighteen to two dozen or more blooms equalling those in first prize stands, and a mass of dark leaves hanging like thick drapery all round, half hiding the pots. Those are the specimens to which judges award silver cups, and the nearer plants approach them in excellence the greater is the pleasure in granting to them the awards they merit."

Cut blooms were next alluded to. The advance in these during the last fifteen years had been marvellous. The best stands of incurved and Japanese varieties even a dozen years ago would not have the remotest chance of winning third prizes now in the best competition. Exhibitors had increased in equal ratio, and at no period in the history of the Chrysanthemum was the standard of excellence as represented in stands of cut blooms so high as it is now. That compelled judges to exercise the greatest discrimination and adopt the best methods known to them in placing the competing stands in their right positions.

Judging by guesswork would not do nowadays in large close contests, and unless the differences in value are obvious to every judge pointing should be resorted to. An instance of its necessity was then given, and different methods indicated. Giving equal prizes was condemned as an easy way out of a difficulty, but almost always unjust to one of the exhibitors. When a silver cup was provided it was either won or lost. When a prize is offered for the champion bloom in a show it is found. He had never known a draw in such a case, and the honour divided between two blooms. If a mark of superiority could be found in one bloom surely it could be in a second and a third, and so on. That, he thought, ought to settle the matter on giving equal prizes. Mr. Wright concluded:—"Do you ask what kind of blooms score the most points? I answer, Not necessarily the largest in the incurved section if they are loose, flat, rough, or stale. They must possess depth in proportion with width, firmness, freshness, brightness, clearness, and smartness. There is the difference, to use a familiar simile, between the well formed, well groomed, fine upstanding hunter, and the rough, shaggy, burly, slouching carthorse. How to produce and present the blooms in the best form is a question for cultivators."

JUDGES AT EXHIBITIONS.

As an exhibitor I should like to protest against the manner in which some judges handle the cut blooms which they are adjudicating upon. Surely it is sufficient to take them out of the stands to examine them critically in close contests without resorting to shaking them savagely as a terrier would a rat, pressing outwards the centre petals, presumably to see if the blooms contain an eye. For what other reason I am at a loss to know they thus treat blooms in the manner named. I cannot help thinking that judges who do as I have seen and described cannot have had any experience with the preparation of cut blooms for exhibition, or they would not give pain by such barbarous treatment of blooms over which hours and perhaps a whole night has been spent in preparing for a show. There are two other reasons why blooms at exhibitions should not be treated in the manner indicated. First they are rendered useless for any other exhibition by having their petals bruised and displaced. Secondly, the public cannot look upon the flowers in their true character after they have been subjected to such unnecessary handling. Visitors are apt to remark, "How roughly Mr. So-and-so's blooms were staged!" through no fault of the exhibitor,

but entirely owing to the want of knowing better on the part of some judges.—AN EXHIBITOR.

CHRYSANTHEMUM MISS MARY ANDERSON.

SINGLE varieties of Chrysanthemums are coming steadily into favour, and they are worthy of all attention wherever flowers are largely employed for decorative purposes. They are easily grown, very free, and in the majority of cases extremely light and graceful—exactly adapted for arranging in vases or stands. One of the best of the section is the variety named Miss Mary Anderson, which has gained much favour



FIG. 49.—CHRYSANTHEMUM MISS MARY ANDERSON.

with many cultivators, and is greatly appreciated in Mr. Ware's nursery at Tottenham. The blooms are of moderate size and excellent form, the ray florets broad, a soft rosy blush at first, afterwards becoming pure white. The blooms are produced with astonishing freedom, some of the stems forming natural wreaths or bouquets. A spray from Tottenham is represented in fig. 49.

CHRYSANTHEMUMS AT CHILWELL.

JUDGING from the number of visitors to the above nurseries during Messrs. Pearson's annual exhibition, the Chrysanthemum is not at all likely to lose its popularity. The Show is unusually good this year, the large house set apart for the purpose being a mass of colour.

Upon entering some good trained specimens well arranged arrest attention. These are composed of standards, pyramids, flats, and bush trained plants. Perhaps amongst the most notable is a grand pyramid of Mrs. Stevens, with between two and three hundred flowers. Triomphe du Nord, Madame B. Pigny, and Bertier Rendatler are also very fine. Of novelties amongst American varieties of promise are Puritan, very good, W. W. Coler, a fine bold flower, reddish bronze in colour, and very distinct in form. George Atkinson is also likely to make a good exhibition variety, the blooms are large and of good form, delicate blush in colour. Mrs. Andrew Carnegie is opening, and promises to be as good as represented in the American Press. Of the other Japanese varieties the most notable are Sunflower, Florence Percy, Avalanche, very fine, though some of the finest flowers are past their best, as also are E. Molyneux, Comte de Germiny, and some others. Mdme. C. Audiguer, M. Bernard, Boule d'Or, Mdme. J. Laing, and its fine sport Sarah Owen, are in fine form, while Miss M. A. Haggis, Violet Tomlin, H. Shoesmith, Lord Alcester (the finest blooms in the Show), Princess Beatrice, Mrs. W. Shipman, John Salter, and Jeanne d'Arc, form the best of the incurved varieties, though it may be seen that Princess of Wales and Mrs. Heale have been very fine. Some novelties are worthy of notice amongst the Anemone class. Mdme. Robert Owen has the appearance of being the whitest Chrysanthemum in cultivation, Nelson, Sabine, Souvenir de Mdme. Blandinière, Jeanne Marty, and Miss Annie Lowe are all well represented. There are numbers grown as decorative plants, which are much admired, especially Wm. Holmes, Wm. Stevens, Source d'Or, Ornaments, Elaine, Sœur Melaine, Coquette de Castille, and the bright Anemone Thorpe junior. There is a large and fine show of fruit. The Zonal Pelargoniums are worth inspection. The Show remains open until the end of the month.—VISITOR.

DRESSING CHRYSANTHEMUM BLOOMS.

BLOOMS for dressing should be cut with a stem 6 inches longer than the tube in which the flower is to be placed, the extra length of stem being required for the operator to draw the bloom down into the tube. Some growers use tubes for the flowers which are not suitable. The flange should be as large as possible, without being seen under the edge of the florets. This is a support which is of advantage in setting off the florets to the best position, and retaining the bottom row stiff. Cut off the leaves from the stem, slip the stem through the tube, bringing the latter close up, but not pressing on the petals at first. Steel tweezers, from 3 to 5 inches long, are the best. The points should be narrow and rough for obtaining a firm grip of the petals without slipping, as is the case with those made from ivory. Care should be taken that the florets are not bruised in the operation by gripping them too tightly, as a light and steady hand is needed to dress the blooms properly. Take the flower in the left hand, and with the tweezers remove any florets that are damaged or out of place, or any that are too stiff to incurve. The top or centre is the correct place to commence dressing after the removal of the florets previously mentioned. If the florets there show an inclination to reflex, very gently draw the jaws of the forceps up to the edges of the florets from the base to the point. If this be done with care and good judgment the centre will be quite filled, while the florets in other parts of the bloom should be arranged as desired. The bloom should then be drawn down as tight in the tube as is necessary to prevent the florets moving out of their place, but in no wise should the bloom be drawn down so low as to reduce the depth of the bloom any more than is absolutely necessary for security. The stem should be fixed in the tube by means of a small piece of cork cut wedge-shaped, and in size according to the space between the stem and the size of the tube. If the cork is soaked in water before using it is softer and more easy to push into its place with the thumb. In conclusion I would advise beginners to practise freely upon various sorts of blooms, and then a knowledge will be gained as to how much pressure each variety will stand from the tweezers without bruising the florets, as there is a difference in the constitution of the petals of some kinds.—E. M. (in the *Chrysanthemum Annual*).

STAGING JAPANESE BLOOMS.

THE following is a very cheap way of staging Japanese blooms, as it does away with the necessity of using cups. As will be seen from the sketch (fig. 53) a piece of wire, No. 16 gauge, is twisted with as many spirals as may be required according to the size of the bloom, and the end is bent to fit into the cup, and the stem is fixed to the wire with bouquet wire. The advantages are that they cost next to nothing, and can be varied to suit a reflex flower like Criterion, which should be shown more or less flat, or if one of Mdme. Lacroix type by bending the wire the drooping character can be preserved.—GEO. WALKER, *Wimbledon*.

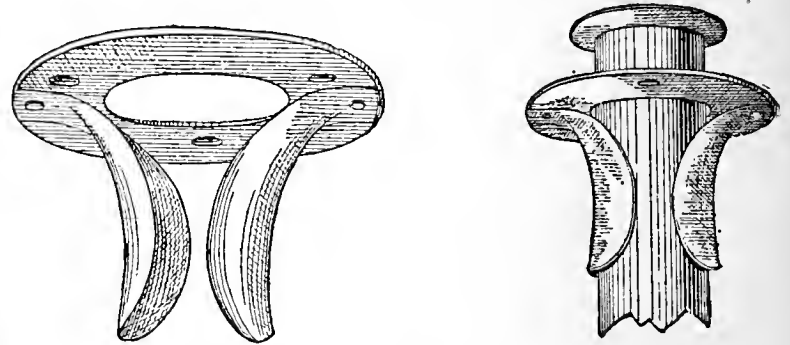
CHRYSANTHEMUM SHOWS.

Teddington, Putney, Chiswick, Cranbrook, and Birkenhead, Thursday, Nov. 14th.
Leicester, Eccles, Wellington (Somerset), and Cheshunt, Friday, Nov. 15th.
Bolton and Derby, Friday and Saturday, Nov. 15th and 16th.
Twickenham, Winchester, Liverpool, and Cardiff, Tuesday and Wednesday, Nov. 19th and 20th.
Rugby and Birmingham, Wednesday and Thursday, Nov. 20th and 21st.
Falmouth, Wednesday, Thursday, and Friday, Nov. 20th, 21st, and 22nd.
Hull (National Society's Provincial Show), Thursday and Friday, Nov. 21st and 22nd.
Chorley and Stockport, Friday and Saturday, Nov. 22nd and 23rd.
Pontefract, Thursday, Nov. 23th.

EXHIBITION APPLIANCES.

FROM Mr. R. F. Jameson, Hesse, Hull, we have received samples of two useful appliances for the assistance of exhibitors. They have both been patented. When exhibited at the Royal Horticultural Society's Chiswick Conference and the Crystal Palace Show they received the commendations of the Judges.

The new Jameson spring cup support (figs. 50 and 51), consisting



FIGS. 50 AND 51.—SPRING CUP SUPPORT.

of a circular plate with two springs attached, is screwed underneath each hole of the show tray, and the two springs grasp the cups one on each side as it is passed through the hole, retaining it at any desired height. This cup support is an improvement on the cup with springs inside, which Mr. Jameson introduced two or three years ago, inasmuch as it cannot draw the stem of the bloom out of the water, and as it adapts itself automatically to cups of various sizes it can be used with exhibitors' old cups.

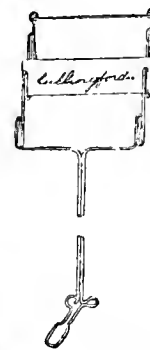


FIG. 52.—NAME CARD HOLDER.

The "Name Card Holder" (fig. 52) contains three cards, one holder being placed behind each row of blooms. To attach the holder to the tray fasten two round-headed screws, one close behind the other, at the back of each row of blooms, slip the foot of the holder at the widest part over the two screws, draw it forward, and it is perfectly firm, but can instantly be slipped back and detached for travelling or other purposes.

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 5TH.

SCIENTIFIC COMMITTEE.—Present—Mr. Michael (in the chair), Mr. Burbidge, Mr. Veitch, Mr. Pascoe, Mr. O'Brien, Dr. Müller, Dr. Oliver, Dr. Masters, and Rev. G. Henslow, Hon. Sec.

Monstrous Chrysanthemums.—Mr. Burbidge exhibited two flowers, in one of which the corollas had become partly virescent and distorted; in the other they were surrounded by a numerous progeny of buds, producing the "hen and chicken" form. The question was raised as to the possibility of fixing such peculiar monstrosities by breeding. It was observed by Mr. Veitch that a tendency to doubling is secured and intensified by self-fertilisation, as occurred in the Balsamiflorum section of his East Indian Rhododendrons. Mr. O'Brien remarked that the first double Begonias were secured in precisely the same way. Observations were made on the possibility of the effects of mechanical injury to plants being hereditary. It was the belief of Mr. O'Brien that Ferns may become tasselled, and transmit that feature solely from repeated injury to the fronds, judging from a case within his experience. Mr. Burbidge also corroborated the belief that irritations which are prolonged tend to produce effects which may be transmitted to the offspring. The cause of the monstrous condition of the specimens exhibited was thought to be over-nutrition, judging from the gross nature of the foliage, &c.

Origin of Chrysanthemum.—A communication was read from Mr. Hemsley, in which he recorded the fact that the earliest specific name given to the Chrysanthemum was not sinense, but morifolium, by Ramatuelle, C. indicum being supposed to be a distinct species. Mr. Burbidge, however, observed that of seedlings from any Chrysanthemum, forms apparently identical with C. indicum, which is a native of China, always arise, leading to the supposition that this latter species is the real origin of both kinds in cultivation. All wild specimens are yellow and single, the other colours having arisen by cultivation.

Orchids Exhibited.—Mr. O'Brien showed the following plants, which were received from Mr. Tautz of Hammersmith:—*Cynoches barbatum*. This first flowered in 1849 with Mrs. Lawrence of Ealing Park. It was (if dimorphic as other species) presumably the male form. A botanical certificate was unanimously awarded. *Stelis micrantha*, a minute flowering plant; *Trichosma suaveolens*, trilabella, this being one of several Orchids now cultivated, with a tendency to Peloria, in that the two other petals are more or less coloured like the labellum.

Indico-javanicum, bigener.—Mr. Henslow described the foliage of this cross, exhibited by Mr. Veitch at the last meeting. Though smaller in size the leaf agreed both in form and anatomical details with

that of the *Rhododendron*, or female parent, in every detail of importance. That of the *Azalea* was markedly different, being obovate instead of lanceolate; toothed and not entire; covered with fibrous hairs instead of being glabrous above, with minute peltate scales below; the cell-walls of the epidermis being sinuate instead of straight; and the proportion of stomata being less than in the *Rhododendron* as well as the cross. The hairs of *Azalea* are very peculiar in structure. They grow on the branches, petioles, midrib, and veins below, and generally scattered over the upper surface of the leaf. They are composed of numerous fibres resembling short liber-fibres, graduated in length so that the longest form the point of the hair. Mr. Henslow observed that he could not discover any previous description of such a structure, which appears to have been hitherto overlooked. He also examined the foliage of the dwarf plant, sister to the above cross. The anatomical details exhibited a very considerable amount of arrest of structure, the number of cells being nearly twice that of the *Rhododendron* in consequence of their minute size, with fewer stomata. It also agreed in most other respects both with the sister-cross, as well as with the *Rhododendron*, except that the shape was more elliptical, and possessed glandular hairs instead of peltate scales. It was observable that this cross followed the supposed rule that the female parent imparted its likeness to the foliage, while the male parent supplied that of the flowers. Mr. Henslow observed that in the 150 hybrids and crosses raised by Mr. Veitch, amongst seven East Indian species of *Rhododendron*, the rule was found to fail entirely, in that each parent would impart certain peculiarities either to the flowers or leaves, according to its own prepotency, but the cause of such a power was at present unknown.

Reversion in Potatoes.—At a meeting of the Scientific Committee on November 13th, 1888, Mr. W. G. Smith exhibited a Potato which was the result of a reversion. Mr. Fenn had crossed two long sorts of kidney Potatoes—viz., Early Coldstream and the Early Ashleaf. The result was a globular form which he called W. G. Smith. After eighteen years, during which this had come true, one plant suddenly reverted to the original type. The specimen exhibited was $5\frac{1}{2}$ inches long, the round one being about $2\frac{1}{2}$ inches in diameter. Mr. Henslow planted these tubers in March, 1889, and the round Potato yielded only 1 lb. 8 ozs. of small tubers; the long one, planted by the side of it, gave 6 lbs. of large sized tubers. Not only were the tubers true to their kinds, but the foliage was very distinct.

Clematis Vitalba.—Mr. Henslow exhibited a photograph of, and described a plant of the Traveller's Joy, or Old Man's Beard, which grows in his garden near Drayton Green, Ealing. It is evidently of great age, as the stem at the base is about 9 inches in circumference. From this proceed several thick branches; half of the plant then spreads over a thick Holly hedge about 5 to 8 feet in height. The *Clematis* extends to about 30 feet each way, completely covering it with foliage and dense masses of blossom. One branch crosses an arched trellis and climbs to the roof of the house, whence, intermingling with Virginian Creeper, hangs in long festoons to the ground. The superficial area covered by the part on the hedge alone is about 150 square yards. The remarkable feature in the case is the enormous and vigorous growth the *Clematis* has made, and yet it is in ground with only a foot or two of earth over fine red gravel, constituting the uppermost and most ancient of the gravel beds of the Thames, there being, as far as is known, not a trace of calcareous matter in the soil. Nevertheless, the plant is usually described as a chalk-loving species. At all events, it is found abundantly on the chalk of Kent, the oolitic limestones near Cheltenham, and the carboniferous limestone near Bristol, &c. Mr. Burbidge suggested that it was just possible, growing so close to the house, that there might have been buried there a quantity of old mortar, &c. The ground, however, was lately excavated for a drain within 4 and 10 feet, when nothing but red gravel was exposed.

FRUIT COMMITTEE.—Present—John Lee, Esq., in the chair; and Messrs. H. J. Veitch, G. W. Cummins, F. Q. Lane, H. Balderson, W. Bates, G. Wythes, W. Wildsmith, J. Hudson, W. Denning, and J. T. Saltmarsh. Mr. W. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent a basket of clean and excellent Mushrooms grown on an outside bed spawned in September. Mr. G. Wythes, The Gardens, Syon House, sent a good ripe fruit of *Monstera deliciosa*, for which a cultural commendation was unanimously awarded. Mr. H. Balderson sent bunches of ten varieties of Grapes cut from one house. The varieties were Alicante, Gros Colman, Madresfield Court, Foster's Seedling, Golden Champion, Trebbiano, Black Hamburg, Duchess of Buccleuch, Muscat of Alexandria, and Mrs. Pinck. Some of them were very good, especially the Muscats, and fine berries of Golden Champion. A vote of thanks was accorded. The Brussels Sprouts growing in the garden were examined by the Committee. Three marks of merit were recorded for Paris Market (Vilmorin) and Northaw Prize, two marks being placed to Veitch's Exhibition and Early Dwarf Paris Market (Oakshott & Millard).

FLORAL AND ORCHID COMMITTEE.—Present—W. Marshall, Esq., in the chair; and Messrs. Shirley Hibberd, W. Holmes, G. Paul, J. O'Brien, H. M. Pollett, J. Laing, P. Blair, H. Turner, J. Walker, H. Herbst, F. W. Burbidge, and C. Noble.

A magnificent collection of Carnations in pots was exhibited by Mr. Jennings, gardener to Leopold de Rothschild, Esq., Ascot. The variety was named Miss Joliffe Improved. All the plants were blooming with great freedom, and a silver medal was awarded. A cultural commendation was awarded to *Begonia Adonis* as a winter flowering variety. It was exhibited by Messrs. J. Veitch & Sons, and had previously received

a first-class certificate. The Orchids exhibited by Mr. Cowley, gardener to F. G. Tautz, Esq., were referred to the Scientific Committee, which see.

THE CULTURE OF ACHIMENES.

IN small gardens, where the stove is made to contribute not only to its own embellishment but to the adorning of the greenhouse and sitting-room during the summer, few races of plants can present greater claims to the attention of the amateur than those included in the natural order of the Gesneraceæ. This statement will more particularly apply to those plants possessing bulbous and scaly tubercles, such as the *Gloxinia*, the *Gesnera*, and the *Achimenes*, as they contain the following desirable requisites—They are easily cultivated; when well grown they are splendid in appearance; when brought into flower they will stand in any place under glass, partially shaded, until late in the autumn; they can be made

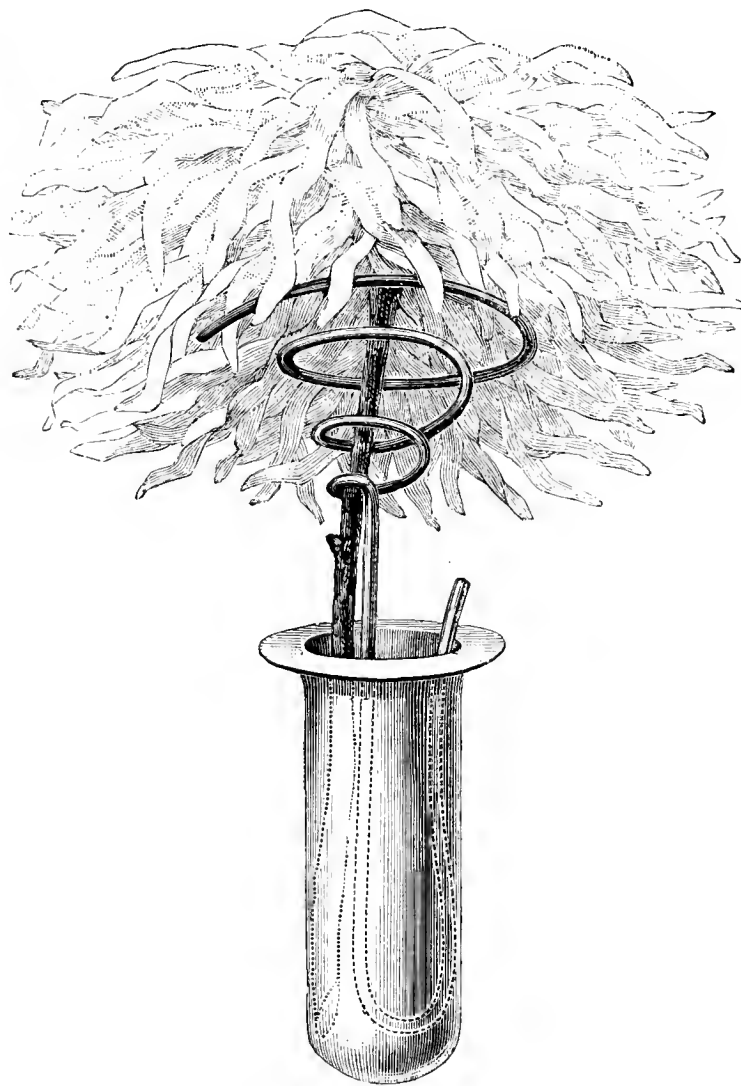


FIG 53.—CHRYSANTHEMUM BLOOM HOLDER.

to flower at almost any season; and, finally, when they cease flowering and the leaves decayed the tubers may be kept in a dry condition in any out-of-the-way place, provided the temperature does not fall below 40° .

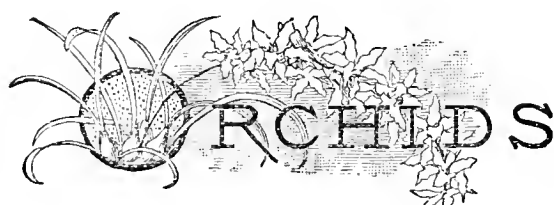
We shall, for the present, confine ourselves to the *Achimenes* all of which species and varieties have scaly tubers.

Propagation can be effected by seeds, but unless for obtaining varieties by hybridising it is not worth saving, as even the leaves root freely. Small tubers are formed in the axils of the leaves of many of them, and, in all, plenty of full-sized tubers are found beneath the soil when the plants have finished their growth.

Instead of placing the tubers into their intended pots and boxes at once, it is better to place them in shallow pans, using any light soil just slightly moist, and doing little more than cover them. A little damp moss placed on the surface will be an advantage. Very little water should be given before the tubers begin to grow, after which it may be given more freely. By this method you will be enabled to choose the strongest growing plants for the centre of the pots. A temperature of about 60° should be maintained, and if early in the spring a little bottom heat would cause them to come all the better.

Shallow pans and boxes filled with plants will give plenty of bloom if well supplied with weak liquid manure, but the plants will flower longer and finer when grown in pots or boxes of the usual depth. A little earthing-up may then be given them at times. Attend well to the drainage, and cover the tubers when planted about an inch with the compost. Instead of placing them all over the pot, which, when they bloom, conveys nothing to the mind of the artistic, place the requisite number of tubers—three, five, seven, &c., according to the size of the pot—with their growing ends inclining to the centre, and the root ends to the circumference of the pot, similar to the spokes in a carriage wheel; and then the specimen, although not so in reality, will convey the idea of a single plant, and not look like a number of plants crowded together.

The soil should be light and rich; three parts loam, three parts peat, one of leaf mould, one of old dry cowdung, mixed together, riddled with a fine sieve—not to use, but to discard the finer particles—and then adding one part of silver sand and one of broken charcoal, will grow them admirably; placing the roughest part of the soil at the bottom, and covering the surface with the finer compost. Proportion the water to the growth. Where the roots have not reached the soil it must not be soaked. The whole family like heat, partial shade, and a moist atmosphere when growing. As the flowering state approaches inure them to more light and a drier atmosphere: neglect to do this, and you may have fine plants with clusters of tubers instead of blossoms. Nature, curbed in her efforts for reproduction one way, will attempt it by another. If you try them in dung frames extra care will be requisite, as the foliage will be injured if the steam and sun meet. Shade and air are the only remedies, or rather preventives. When they have flowered, and the foliage decayed, remove the tubers and preserve them in dry earth, or merely turn the pots on their sides. They must never be exposed to frost. Those started early this spring must be so employed next season; the different successions should therefore be marked. I have found them extremely useful for decorating greenhouses during the summer and stoves in the autumn. In warm sheltered places some of them would even succeed for a time out of doors.—R.



CYPRIPEDIUM INSIGNE.

AN old Orchid of no startling character, but when it is grown until the plants require 10-inch or 12-inch pots, and fill these well, it is very massive, particularly if each bears upwards of a hundred flowers. We have several plants like this, and they are as useful as any we possess at the present time. They are kept in a warm house in February, March, and April, hardened off in May, and stood in a cold frame from June until September, and when in flower we can let them remain in a room for six weeks without injury, but care is taken not to give them much water at the roots during that time.—M.

ONCIDIUM FORBESII.

THIS beautiful Oncid is now flowering in the collection of E. G. Wrigley, Esq., Victoria House, Dukinfield, where it is grown in an intermediate temperature. The plants are thriving in the ordinary teak baskets, and are flowering very freely, one plant carrying a spike of twenty-seven flowers. The sepals are obovate; the petals are larger and much undulated, both being of a bright chestnut brown, broadly margined, with broken lines of golden yellow. The lip, which is clawed, is larger than the petals, and of the same colour and markings. This makes a good companion to *O. crispum*, though it exceeds that variety for beauty and size of flower.—H. COOPER.

A FEW ANGRÆCUMS.

ONE of the small forms of the genus *Angræcum* is *A. Scottianum*, but none the less pretty on that account for its distinctness from allied species, and the delicacy of the flowers impart considerable interest to the plant; yet it is still somewhat rare, and I have only seen specimens in a few of the largest collections, but that is probably due to the fact that it has not been in this country long enough to permit very extensive propagation. When better known it will no doubt be included in most collections of moderate extent, as it deserves the attention of all growers who do not limit themselves to the merely showy Orchids. It is epiphytal in habit, with narrow terete leaves, very dissimilar from most other *Angræ-*

cums; they are tapering or awl-shaped, about 4 inches long, and one-eighth to a quarter of an inch in diameter, channelled in the upper surface and ridged below. The flowers are of a moderate size, very delicate in texture; the lip an inch or more across, pure white, with a narrow yellowish spur 3 to 4 inches long. The peduncle is slender and usually bears but one flower. The species is a native of the Comoro Islands, and I believe first flowered in this country at Walthamstow in 1878 in Mr. R. Scott's collection of Orchids, and in honour of that gentleman it has received its name.

A. pellucidum is from Sierra Leone, whence it was obtained by Messrs. Loddiges, and in their nursery it flowered in November, 1842. The plant is of rather bold habit, with large bright green leaves frequently exceeding a foot in length. The flowers are white, of a delicate semi-transparent texture, having a finely fringed labellum, and are produced closely on racemes of moderate length. Like the majority of species it usually flowers during the winter months, and thrives either on a block or in a basket suspended from the roof of a warm house. Though not by any means common it is fairly well known, and is included in most of the large trade collections. A coloured plate of it was published in the "Botanical Register" thirty-seven years ago, or about two years subsequent to its first flowering at Hackney.

Like the last-mentioned, *A. pertusum* is a native of Sierra Leone, but I do not know to whom is due the credit of first introducing it to England. It appears, however, to have been in cultivation several years before *A. pellucidum*, as it was sent to Kew about 1850 by Messrs. Jackson of Kingston, but had previously flowered with Messrs. Loddiges, for it was noticed in Paxton's "Magazine of Botany" in 1840. It is a very distinct form, with long narrow dark green leaves, and slightly nodding racemes 6 to 7 inches long of small closely placed creamy white flowers, which in their mode of arrangement are suggestive of *Dendrochilum glumaceum*. The spurs are comparatively short, and with a well-marked yellow tinge, which gives a peculiar appearance to the inflorescence.

An interesting plant is *A. distichum* owing to the peculiar form and arrangement of the leaves, and the diminutiveness of the plant. It affords a very striking contrast compared with *A. sesquipedale* both in the size of the flowers and general appearance. While the latter has the largest flowers in the genus and order and is of bold habit, *A. distichum* possesses unusually small flowers, certainly among the smallest of the order; and the short stems in tufts, with closely imbricated dark green leaves, still further add to its distinctiveness. In the habit of the plant there is little to suggest affinity with the *Angræcums* to casual observation, but there is a family likeness in the small white spurred flowers, which are produced from the axils of the leaves. However, by some authorities, for instance by Reichenbach, I understand that it has been considered sufficiently distinct to be assigned to another genus—namely, *Aeranthus*, but the older name is still retained in the chief collections, the other, *Aeranthus distichus*, being simply given as a synonym. The plant is found growing on the bark of trees in the neighbourhood of Sierra Leone, whence it was first imported by Messrs. Loddiges about 1835; so that it is an old inhabitant of our gardens, though by no means well known, perhaps owing to its being more curious than beautiful, though the neatness of the plant will always ensure it some admirers.—C.

EUCCHARIS AND THE MITE.

AN article on the above subject by "M. D." in the Journal for October 24th, page 349, reminded me of a mental promise I had made to furnish the Editor with the details of a rather dearly bought experiment, and which, I think, will materially strengthen "M. D.'s" conclusion. We had a dozen 10-inch pots which for years were the picture of health; the leaves were large and of a beautiful dark green; the pots also were full of bulbs and roots, as they had not been potted for six years. Do what we would, however, we could not induce them to throw up a number of flower spikes at one time, but only a few from each pot, and this at no definite time. They were grown in the stove with other plants, and when no young leaves were visible they were removed to a cool house and supplied with just sufficient water to preserve their leaves; but this and various other means used to induce them to flower freely signally failed to do so.

Under these circumstances we felt the plants were occupying valuable space without giving us adequate returns; and that being a state of things we never intend to tolerate longer than we are

obliged to, we decided to see what three months out of doors would do for them. Accordingly in July, 1887, we placed them out where they got a good deal of sun. In a few days they began giving unmistakeable signs of not being in their right element, and only the remembrance of their past behaviour would have induced us to leave them to their fate. When we removed them to the stove in September there were very few leaves left on them, and these were of a sickly hue. Our hopes of flowers were small, and we were not deceived, for only here and there one appeared, and these very feeble. For sixteen months we did all we could think of to restore them to health short of repotting them, but we could get nothing from them but a few sickly leaves, which almost as quickly died away.

In January this year we turned them out of their pots, intending to either finish them off or restore them to health. More than half of the bulbs had vanished, and what remained were many of them reduced to mere outside scales, and the whole were covered more or less with very minute insects, especially in and round the base of the bulbs and under the top part of the scales. Through a small pocket lens the insects appeared about the size of a red spider; and having never seen anything like them before we concluded they must be the Eucharis mite. I had read several appalling accounts of these creatures, and therefore concluded there were little hopes of restoring the bulbs to health.

Practical knowledge is always a tempting bait for a gardener, and here was one worth biting at; hence, notwithstanding the deplorable condition of the bulbs, we decided to give them a trial, consoling ourselves that, if we failed to restore them to health, we may learn something of the mite. The bulbs were all soaked, there were no roots, in a strong solution of fir tree oil for an hour. They were then treated separately and all loose scales removed, and all decayed parts brushed out with a nail-brush, and whilst still wet covered with powdered charcoal. They were sorted into three sizes and potted in well drained 6-inch pots, placing from six to twelve bulbs in a pot, the compost consisting of two parts loam, one part each of leaf mould and sand, with a sprinkling of bone dust and soot. We plunged them in a bottom heat of 80° in a close propagating pit, and to our surprise at the end of three weeks they began pushing up leaves, and by the end of April the plants were in full health and vigour. At the present time the plants are perfect little specimens, the large dark green leaves fully demonstrating the healthy condition of both roots and bulbs.

Our only regret is that we did not send some bulbs to the Editor, so as to have had an authoritative report as to the nature of the insects. As it is, not being versed in entomology, we are not in a safe position to positively affirm that the insects were what is known as the Eucharis mite, but from what we have read and heard of it we have every reason to believe it was; and that being so, here is a plain proof that they are the result and not the cause of Eucharis decadence. Moreover, a sudden check, low temperature, and careless watering will quickly make a healthy plant fit food for this dreaded enemy.—J. H. N.



DARK ROSES.

THESE are always admired, but unfortunately some of the plants that produce them are shy in growing. I intend shortly planting some scores of dark Roses with the object of having them early. I want them to grow freely, indeed climb walls if possible, and flower profusely. I have not arranged all my varieties, and any reader who has found some little known sort of special use under the conditions suggested would oblige by forwarding their experience for publication.

ROSE GLOIRE DE DIJON.

One of the best known Roses, and if all the Roses grown could be counted it would probably top the list, as it is much esteemed by amateurs and cottagers, but for all that it might be still more generally cultivated. Indeed there is no home in the kingdom that can accommodate a Rose that should be without it, as its combined qualities excel all others. It is wonderfully free in growth, hardy in constitution never refuses to grow, and never dies prematurely. In fact the death of a Gloire de Dijon Rose may be regarded as quite as great a wonder as the death of a certain well known quadruped in the animal kingdom. It is the alpha and omega of Roses, blooming so early as April, and never ceasing until severe frost occurs. I am within sight of several young plants that have produced shoots 12 feet in length since they were planted in March last, and another huge plant not further away has

produced thousands of blooms this season, and scores are still striving to develop. The buds when in a young state are charming buttonhole or bouquet flowers, and further on the huge buff fragrant blossoms delight all who see them. It is as a wall plant that this Rose shines. When grown as a bush it has rarely an opportunity of fully developing its splendid qualities.—ROSARIAN.

ROSES IN WINTER.

LOOKING over the Rose article by "Northener," on page 383, I notice he says, "All outside flowers are over by the end of October." I hope mine are not. At the present time I have a splendid lot, some blooms fit for any exhibition in July. A friend asked me the other day how I managed to have such blooms at this season of the year. My reply was rather a jocular one, but to the point. With manure and brains, or, to put it in another form, I added, cultivation with this object in view. I have a standard of Madame Berard with about 100 buds on in all stages, and a Souvenir de la Malmaison with about the same quantity, besides many other varieties. With mild weather I hope to have many useful blooms yet.—J. HAM.



EVENTS OF THE WEEK.—The Shows still continue numerous. To-day (Thursday) the Putney, Teddington, and Diss Chrysanthemum Societies will hold their annual Exhibitions. On Friday, November 15th, there are shows at Leicester and Cheshunt; on the following Tuesday (November 19th) at Twickenham and Winchester; on Wednesday (November 20th) the Birmingham and Rugby Exhibitions take place, and on Thursday the National Chrysanthemum Society's Provincial Show will be held at Hull in conjunction with the local Society.

— WORCESTER'S NEW MAYOR.—The Corporation of Worcester have this year taken the very unusual step of inviting a gentleman who was not one of their body to accept the office of Mayor, their choice falling upon Mr. Richard Smith-Carington, head of the firm of Messrs. R. Smith & Co., whose famous nurseries and seed establishment at Worcester are known far and wide. The festival of the three choirs, which is an historic musical gathering in the west midlands, takes place next September at Worcester, and the knowledge that Mr. Smith-Carington had for many years been one of the leading supporters of this festival, and of the clerical charity associated with it, largely influenced the Corporation in making their choice, which was unanimous. A few minutes after his election as Mayor, Mr. Smith-Carington was appointed an Alderman of the city for a term of six years, and he also holds the offices of Justice of the Peace and Charity Trustee. His worship's acceptance of the mayoralty has afforded much satisfaction, not only to the Corporation, but to the citizens, by whom he is held in much respect. He resides in the picturesquely situated mansion of St. Cloud at Powick, which affords a magnificent view of the Malvern Hills and the lovely Severn Valley.

— MR. BLACKMORE AND HIS GARDENER.—At Sunbury on Monday Mr. Blackmore, the well-known novelist, prosecuted his head gardener, a man named Tooley, for having stolen about £5 worth of Pears, and a Teddington fruiterer, named Woodward, for having received the property, well knowing it to have been stolen. The latter removed the Pears in a cart from Tooley's cottage to his shop, where Mr. Blackmore identified them. Tooley pleaded guilty, and was committed for three months with hard labour. Mr. Lyon, who appeared for Woodward, pleaded that there had been no wrongful act on his client's part, but the prisoner was sent for trial.

— SUSSEX RAINFALL.—The rainfall at Cuckfield, Mid-Sussex, for October was 6.61 inches, an amount only exceeded on two occasions during the past ten years—viz., October, 1880, when it was 8.23 inches, and October, 1882, when 6.86 inches was registered. It is 2.95 inches above the average. The heaviest fall was 0.89 inch on the 19th, rain falling on twenty-five days. Highest temperature (not strictly shade) 66° on the 10th and 13th; lowest temperature, 32° on 13th; mean day temperature, 59.3°; mean night ditto, 40.2°; mean temperature, 49.7°, just the average. No frost sufficient to injure Dahlias yet, and they are still quite gay, and Runner Beans are also uninjured.—R. INGLIS.

— WE are informed that the warming and ventilating of the various offices and Committee rooms in connection with the new Church House, Westminster, have had special attention bestowed upon them. This branch of the work having been executed by Messrs. J. WEEKS AND CO., King's Road, Chelsea, on the new and improved system which they have recently introduced, and which has given great satisfaction at the New Buildings, Eton College, and the numerous buildings to which it has been applied.

— *CYPRIPEDIUM SPICERIANUM*.—This charming Lady's Slipper is a striking object just now in one of the warm houses at the Birmingham Botanical Gardens, several splendid forms of this plant being now in full bloom. It is a compact small growing species with bright coloured flowers. Mr. Latham has raised most of these plants from seed, and although there is a slight variation in colour in some, the individuality of the species is preserved, and the plant is easily cultivated. It is truly a little gem, and should be in every collection.

— *EUCHARISES*.—The remarks of "A Londoner" (p. 398) anent the above subject calls for little comment beyond answering the question whether I believe in spontaneous generation. One does not necessarily require to be a believer in this theory to write the remarks which bring forth the query. That insects are generated in some plants more than others is a well-known fact, and my observations lead me to believe that certain conditions of plant life are more favourable for the growth of the invisible germs than others. When a plant is in a weak state from any unnatural cause, such as over-watering, this condition is much more suitable for their growth into insect life than when through proper management it retains its normal vigour. Many instances could be cited in proof of this, but it is quite unnecessary to bring forward any others than those already before the readers of the Journal. The two cases referred to in my previous communication occurred under my own notice, so that I can vouch for their authenticity, and the plants of *E. candida* afford similar evidence. From the concluding sentence of "A Londoner's" letter there seems to be a feeling abroad that I place light value on Mr. Pettigrew's ability as a gardener. Now, although I differ from his aquatic system of nursing baby *Eucharis*—to use "A Londoner's" term—from what I have heard and read about the Castle Gardens at Cardiff they must be under excellent management, and I yet hope to sail across and see them when my ship comes in.—M. D.

— *RESTING EUCHARISES*.—In Messrs. Roberts Brothers' great establishment for growing flowers for market at East Grinstead what may be fairly regarded as one of the finest collection of *Eucharises* in the kingdom may be seen. There are several large houses filled with plants, of which there must be some thousands, and they are remarkable for their vigour and floriferousness. "Do you rest them periodically?" was a question put to Mr. Roberts. "No," was his reply, with a shake of the head; "I should be very sorry." They are always moist, always growing, always flowering, and repotted about once in three years. They appear to be managed very much on Mr. Pettigrew's system, and it is impossible to imagine plants in a more satisfactory condition.—A LONDONER.

— *PEACH CULTURE IN THE OPEN AIR*.—I do not think this is practised very zealously. I have heard many say Peaches would not succeed in the open, but the attempts to produce them were not remarkable, and I do not know of a single instance where the matter was gone into thoroughly that it did not prove a success. In our case I do not consider the attention is special, yet we have been gathering Peaches constantly from the open walls since the middle of July, when that excellent early variety, Rivers' Alexandra, gave us our first fruits. This was followed by Hale's Early, then came Dr. Hogg, both good open air varieties. Barrington was fine during the first half of October, and Sea Eagle has not been long gathered. A supply of Peaches from the open walls for a period of four months is worth trying for, and I urge on all who never attempted their culture in the open to give them a trial, while those who never went into their culture heartily might profit by renewing it. Two points are absolutely essential in their treatment—one being thorough drainage for the trees to ensure their health, and the other efficient protection of the blossom from the time it expands until the fruit are formed.—SOUTH WALES.

— *DISEASED POTATOES* are generally regarded as so utterly worthless that they merit no treatment, but so long as they do not become pulpy they are valuable for pigs, and for this purpose alone they pay for attention. In some seasons we have thrown our small and

diseased Potatoes into a large heap, and in a week or two afterwards they were only a decayed mass; but this year we spread them out in a thin layer in an out-of-the-way corner under the trees, with the result that they are keeping some weeks longer than formerly, and the bulk of them will give a return in feeding.—M.

— *THE HALL AND FRASER FUND*.—Mr. Fred Horsman writes:—"I am pleased to inform you that the subscription up to date towards this Fund is upwards of £363. This week's list includes £10 from G. C. Raphael, Esq.; £10 from H. Greenfield, Esq.; and £5 5s. from Jas. Buchanan, Esq. If you will kindly ask the gardeners to contribute their mites it will enable us to soon close the list." Mr. Horsman's address is Hollybrook, Colechester, where subscriptions may be sent.

— *HENRY JACOBY AS A WINTER FLOWERING PELARGONIUM*.—This variety is well known as one of the most valuable in the flower garden in summer, but it is equally floriferous and showy if grown in 6-inch pots for conservatory decoration in winter. Some plants of it propagated last May, grown in the open in pots and never allowed to bloom until now, are opening many huge trusses, while many more are appearing. From past and present experience of all the *Pelargoniums* we have tried for winter flowering this one is the best.

— *MEDLARS* are a heavy crop. We only gather them when there is danger of their being injured by frost, and they are often on our trees in November. When taken in, we spread them out in a cool shed, and allow them to remain there until they become soft, when some are used for dessert, but the bulk are converted into a delicious jelly.

— *JUDGING VEGETABLES AT THE LATE EDINBURGH SHOW*.—"North Countryman" writes: "Vegetables always create much interest at Edinburgh, especially amongst professionals, and the exhibits in this section on a show day are judged (unofficially) hundreds of times over; but although I have attended these shows for many years, I have never been more puzzled to follow the judges than I was at the recent Show. Extreme size or coarseness were the only features I could see that they had recognised. The largest Onions irrespective of quality were first. Large dibble-formed Cucumbers were preferred to those of a compact type with little or no neck. In the leading collection of vegetables the same Cucumbers were prominent as one dish, another was composed of wrinkled Carrots, badly matched, that would not have gained a fourth prize in a Carrot class. A third dish was two Vegetable Marrows, mottled in character and of no recognised type, and a fourth dish was equally unsuitable for a gentleman's table, being two monster Cabbages of the Winningstadt form, and these were four of the dishes in the collection of twelve sorts that won the Veitch Memorial medal on the first occasion of its being offered for vegetables in Scotland."

— *BULLRUSHES FOR WINTER DECORATION*.—What is more pleasing for artistic decoration of vases and rooms in winter than Bullrushes? Few have an opportunity of seeing them growing naturally in their swampy bomes, and this is probably why they are so much valued artificially, but in many cases they are too late in being cut, and they are not long in becoming fluffy in the heads, and falling to pieces after being introduced to warm rooms. To avoid this they should always be cut before November, or a little before they become ripe, then the heads barden and remain intact for many months.

— *MICHAELMAS DAISIES*.—Even hardy flowers become scarce under the climatal conditions of October and November, and the majority of plants that were formerly bright assume a worn-out aspect, but that is the season when Michaelmas Daisies appear in their best form, and a collection of them is most valuable. The habit of all the varieties is good, the flowers varied in size and colour, although of the same form, and, cut or uncut, they charm all who come in contact with them. They should be grown in every garden.—PRACTITIONER.

— IT has been generally supposed that the *MANGO WEEVIL* infests the pulp of the fruit, but in a letter read at a recent meeting of the Committee of the Agri-Horticultural Society of Madras from Mr. C. I. Denton, forwarding specimens of Mangoes, called by the Canarese the Bee Mango, he states that the peculiarity of the fruit is that the stone contains a bee existing on the kernel. Specimens of the insect were forwarded by the Madras Agri-Horticultural Society to Mr. Coates of the Indian Museum, who identified them as *Cryptorhynchus magnifera*, the Mango weevil, whose normal habitation is in the pulp of the fruit, and not within the stone. The fruit sent to the Society was carefully examined, and the pulp was, in every case, free from the insect, which was only discovered when the stones from which the pulp had been removed were broken open.

— AN interesting paper on Japanese lacquer, read lately by Mr. R. Hitchcock before the Chemical Society of Washington, has been printed in the Proceedings of the United States National Museum. Japanese lacquer is the product of a tree, the *RHUS VERNICIFERA*, D.C., which grows throughout the main island of Japan. It attains a large size, the trunks sometimes measuring a metre in diameter. It is said the tree will live for forty years, but only comparatively young trees are valued for the production of lacquer. Having yielded for several years they are cut down, the lacquer extracted from the branches, and young trees take their places. Having given an account of the chemical composition of lacquer, and described the uses to which it is applied, Mr. Hitchcock urges that it should receive more attention than has hitherto been devoted to it by manufacturers in America. "It gives a surface to wood," he says, "much harder than our best copal varnish, without brittleness. It takes a polish not to be excelled, which lasts for centuries, as we may see in the old treasures of Japan. It is proof against boiling water, alcohol, and, indeed, it seems to be insoluble in every agent known. It is the best possible application for laboratory tables. I have a set of photographer's developing trays that have been in use for more than a year, and I find them excellent and cheap. In

heteroecism were adduced, and some problems suggested for the consideration of members of the Society. The Ustilagineæ were then shortly referred to, and *Ustilago segetum*, the corn-smut, given as a familiar example. The paper was illustrated by diagrams, specimens and the sections shown under the microscope.

CAREX VARIEGATA

ONE of the most graceful plants in the group of those suitable for table decoration, exhibited by Messrs. Veitch & Sons, Chelsea, at the meeting of the Royal Horticultural Society on October 22nd was that depicted in the woodcut (fig. 54). It is a variegated form of a species that has not yet been determined, as flowers have not been produced at present, but it has received the appropriate provisional name of *variegata*. The leaves are very narrow and slender throughout their entire length, most elegantly recurving and drooping, green with a pure white central stripe, that is shown in the drawing very clearly, as it is much reduced. It is difficult to imagine any plant better fitted for table decoration than this, and it will be a useful companion for the lighter *Crotons* and *Dracænas*.

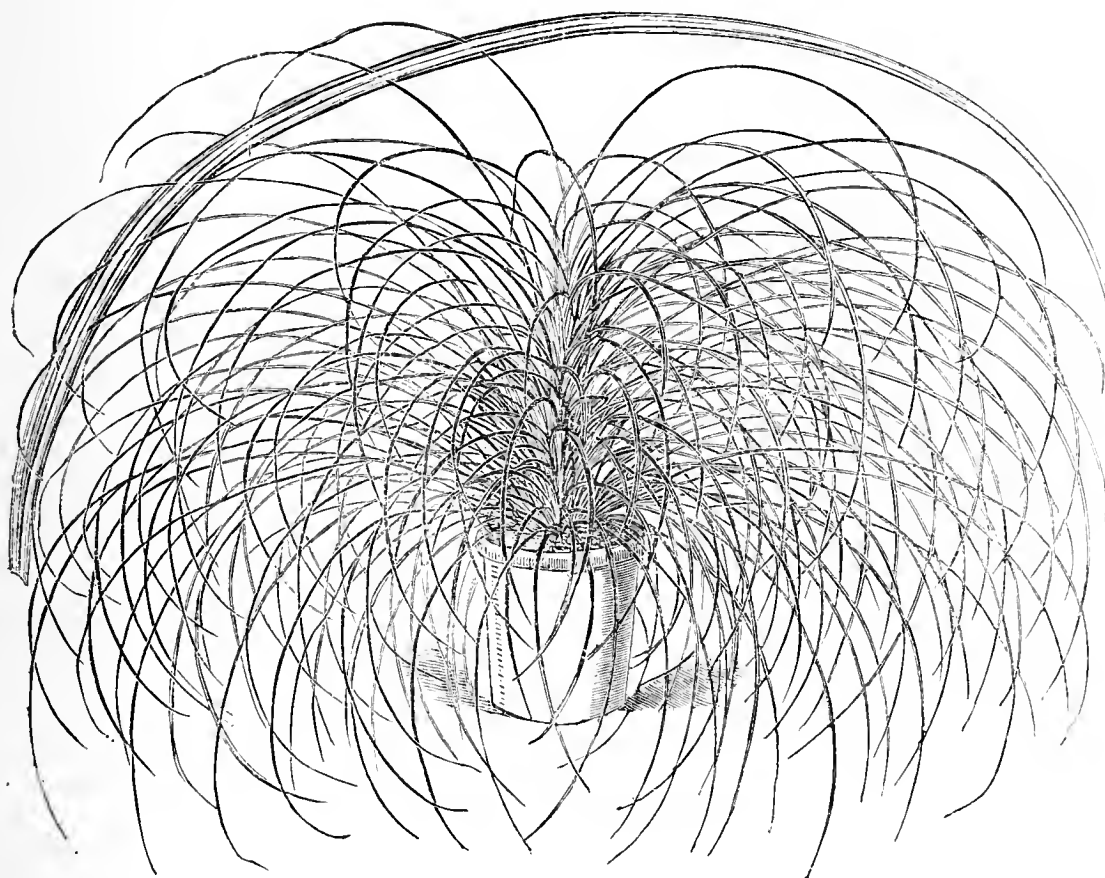


FIG. 54.—*CAREX VARIEGATA*.

Japan it is used for many household articles." Unfortunately, lacquer poisoning from the fresh material is a serious danger. According to Rein, the poison is a volatile acid, and Mr. Hitchcock suggests that it might be removed by a heat that would leave the lacquer uninjured.

— AT the last meeting of the ANDERSONIAN NATURALISTS' SOCIETY of Glasgow, amongst the papers read was one by Mr. R. Turner Vice-President, on the "Uredineæ and Ustilagineæ." He explained the relations of these microscopic Fungi to other plants, and their position in the vegetable kingdom. They are all parasitic upon some living plant, and consist of two essential elements—spores and mycelium. The spores are very diverse, the mycelium very similar. The same mycelium gives rise to several different kinds of spores, each of these being formerly regarded as a different genus. The production of cluster-cups and of the spermatia, with their so-called spermatia, was described. It was shown that these spermatia have been by no means established as equivalent to pollen in function. As an example of heteroecism, the life history of *Puccinia graminis* was traced: first, the æcidiospore stage on the Barberry, then the rust on Wheat, succeeded by mildew, and finally, the germination of the teleutospores and the production again of æcidium on Barberry. Many other instances of

CHRYSANTHEMUM SHOWS.

NATIONAL CHRYSANTHEMUM SOCIETY, WESTMINSTER
AQUARIUM.—NOV. 12TH AND 13TH.

AS was expected, owing to the earliness of the season, the date fixed for the above Show proved fully too late, and numbers of intending exhibitors who had entered for the leading classes had to withdraw at the last moment. The competition was in consequence not quite so keen as usual, but the quality of the cut blooms was generally good. The groups and specimen plants were excellent, the display of vegetables, fruit, and sundries most extensive.

CUT BLOOMS.

The principal class was for forty-eight blooms, twenty-four incurved and twenty-four Japanese, restricted to *Chrysanthemum* and *Horticultural Societies*. The Wimbledon and District Royal Horticultural and Cottage Gardeners' Society, represented by Mr. C. Gibson, were first with a good collection, comprising the following varieties:—Japanese, back row: Edwin Molyneux, Sunflower, Mrs. J. Wright, Val d'Andorre, Fair Maid of Guernsey, Belle Paule, Carew Underwood, and Middle. Lacroix. Middle row: Lady Lawrence, Mons. Brunet, Ralph Brocklebank, M^{me}. Audiguier, Meg Merrilies, Boule d'Or, Album Pimbratium, and Charlie Sharman. Front row: L'Adorable, Mrs. H.

Wellam, Japonais, Pelican, Grandiflorum, Mdme. J. Laing, Jeanne Délaux, and Sarah Owen. Incurved, back row: Queen of England, Golden Empress (2), Empress of India (2), Golden Queen (2), and Lord Alcester. Middle row: Princess of Wales, Nil Desperandum, Miss M. A. Haggas (2), Violet Tomlin (2), Queen of England, Lord Wolseley, and Lord Alcester. Front row: Hero of Stoke Newington, Mr. Brunlees, Princess Teck, John Salter, Princess Beatrice, Barbara, Jeanne d'Arc, and Golden Eagle. The Cranbrook and Weald of Kent Society, represented by Mr. J. Doughty, were a very close second, and could have been but few points in the rear, the blooms being very fresh and good. The Hull and East Riding Society, represented by six growers, were third.

Incurved.—Forty-eight varieties were best shown by Mr. R. Adams, gardener to G. R. Hudson, Esq., Frogmore Hall, Hertford, who had an even and fresh display with no specially good blooms. The varieties were as follows:—Back row: Queen of England (3), Lord Alcester (3), Prince Alfred, Empress of India (3), Golden Empress, Bronze Queen of England (2), Alfred Salter, Golden Queen (2). Middle row: Miss M. A. Haggas (3), Princess of Wales (2), Golden Queen, John Salter (3), Alfred Salter (2), Violet Tomlin, Golden Empress, Lord Wolseley, Cherub, and Golden Empress. Front row: Mrs. Shipman, Refulgens (2), Princess Teck (2), Prince Alfred (2), Princess Beatrice, Barbara, Mrs. Heale (2), Mr. Brunlees, Lord Eversley, Cherub, Nonpareil, and Mrs. Norman Davis. Mr. G. Inglefield, gardener to Sir W. Kelk, Bart., Tedworth House, Marlborough, was second, but though some of his blooms were much finer than the first prize lot, notably the Queens, they were very uneven, some being quite commonplace. There appeared to be no other exhibitor. Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, won with twenty-four, a fresh, neat, even lot in perfect condition, though somewhat small. He was followed by E. Sanderson, Esq., Willesden, whose flowers were somewhat too small. Mr. W. Thomas, gardener to W. Marshall, Esq., Taunton, was third with larger but rough blooms. There were three exhibitors of twelve varieties (prizes given by Messrs. Jensen & Co.). Mr. A. J. Salter, gardener to T. B. Haywood, Esq., Reigate, won with a very neat lot of medium size; Mr. Thomas being second; and Mr. King, gardener to W. MacFarlane, Esq., Rickmansworth, third, both of these having larger, but coarse flowers. In another class for twelve Messrs. Hill, gardener to F. D. Brockman, Esq., Hythe; W. Collin, gardener to J. W. Carlisle, Esq., Hertford; and E. Santy, Esq., Ealing, received the awards, there being several other exhibitors.

Japanese.—These were shown very extensively, and formed a very fine display. In the chief class (forty-eight blooms) Mr. C. Cox, gardener to J. Trotter, Esq., Hertford, won, but with a very uneven lot. The varieties were as follows:—Back row: Madame Audiguier, Meg Merrilies, Boule d'Or, Stanstead White (2), W. G. Drover (2), Avalanche (2), E. Molyneux (2), Lady Lawrence, Duchess of Albany, Bouquet Fait, and Triomphe de la rue des Châlets. Middle row: Jeanne Délaux (2), Triomphe de la rue des Châlets, Elaine, Baronne de Prailly, Carew Underwood (2), Sunflower (2), Lady Lawrence, Ralph Brocklebank (2), Mons. Tarin, Mrs. Wheeler, Meg Merrilies, and Madame Audiguier. Front row: Baronne de Prailly, Val d'Andorre, Thunberg (2), Marguerite Marrouch (2), Mons. Astorg, Mr. J. Laing, Japonais (2), Mdle. Lacroix, L'Adorable, Album Fimbriatum, Sarah Owen, Duchess of Albany, and Mdle. B. Pigny. Mr. W. Packman, gardener to C. E. Shea, Esq., Foot's Cray, was second; and Mr. R. Adams third with moderate lots. There were several exhibitors of twenty-four blooms. Mr. W. Thomas won with a somewhat uneven stand, the best being Meg Merrilies, Madame Baco, Triomphe de la rue des Châlets, F. Marrouch, and Ralph Brocklebank. Mr. C. J. Salter was second with smaller but fresh flowers, and Mr. Inglefield third. Mr. W. Thomas again won with twelve blooms for Messrs. Jensen's prizes with a capital lot of flowers, amongst which Avalanche, Thunberg, Mrs. J. Laing, and Meg Merrilies were conspicuously fine. Mr. G. King was a moderate second, and Mr. Burnett, gardener to Mrs. Henton, Uxbridge, third. In another class for twelve Mr. Hill was first with a capital lot; E. Santy, Esq., second, and Mr. C. Lane, gardener to E. H. Coles, Esq., Caterham, third. Mr. Bettesworth, gardener to R. Ewing, Esq., Cheshunt, had a capital stand of Avalanche in the class for six White Japanese; Mr. D. Hill being second, and Mr. W. Thomas third with the same variety. The last named won with six of any colour, an admirable stand of Ralph Brocklebank; Mr. Calvert, gardener to J. H. Houblon, Esq., Bishops Stortford second with Boule d'Or, and Mr. J. Moon third with Mr. H. Cannell.

Reflexed (twelve) were well shown by Mr. Collin, the blooms being all in good condition. The varieties were—King of Crimson, White Christine, Cloth of Gold, Peach Christine (2), Golden Christine (2), Cullingfordi (2), Phidias, Dr. Sharpe, and Pink Christine. Mr. M. Russell, gardener to Dr. Lewis, Henfield, was second with smaller but neat blooms, and Mr. D. Hill third. In two other stands, Amy Furze (not admissible) was shown. Japanese reflexed (twelve) were best shown by Mr. W. Packman, the varieties being Val d'Andorre (2), L'Adorable (2), Mr. J. Laing, Maiden's Blush, J. Délaux (2), Madlle. Paule Dutour, La Triomphante, Elaine, and Criterion; Mr. J. Moon, gardener to the Misses Arkwright, Harlow, following. Mr. M. Sullivan won with large Anemones, a fairly good lot, comprising Mr. Pethers, Lady Margaret (good), Emperor, Nelson, Sabine, George Sand, J. Thorpe, jun., Acquisition, La Marguerite, Fleur de Marie, Mrs. Taylor, and Nouvelle Alvéole. E. C. Jukes, Esq., Winchmore Hill, was a very

creditable second, and Mr. Russell third. Mr. Sullivan again won with Japanese Anemones, good examples of Jeanne Marty (3), Souvenir de Madame Blandinières, Madame Cabrol (2), Ratapail, Madame Clos, Fabian de Médiana, Marjolaine, Madame Ghys, and Madame Berthe Pigny. There appeared to be no other in competition. Mr. G. French, gardener to Dr. Stanley Adams, Palmer's Green, won with Anemone Pompons, a neat and very pleasing stand, the varieties being Regulus, Marguerite de Coi, Rose Marguerite, Briolis, Madame Montels, Mr. Astie, Marie Stuart, Queen of Anemones, Antonius, Miss Nightingale, Perle, and Madame Sentir. Mr. W. G. Gilbert, gardener to B. Foster, Esq., Guist, Norfolk, was a fair second, and Mr. Chadwick, gardener to E. M. Nelson, Esq., Ealing, third.

The classes for bouquets, wreaths, epergnes, &c., produced a very beautiful display. For a table with bouquets, wreaths, sprays, button-holes, &c., Messrs. Perkin & Sons, Coventry, won with a most chaste and beautiful arrangement. Mr. G. Newman, Broadway, Bromley, second, and Mr. W. Gordon, 41, Duke Street, St. James', third, extra prizes going to Mr. W. Brown, Richmond, and Madame Josephine, 4, Lower Grosvenor Place, Belgravia. Mr. J. B. Crane, Archway Road, Highgate, was placed first for a bouquet, Mr. Ings, gardener to Sir S. Wells, Hampstead, second, and Mr. W. Gearing, Sevenoaks, third.

GROUPS.

Undoubtedly the finest in the Exhibition, and perhaps one of the best seen this year, was that arranged by Messrs. Laing & Sons, Forest Hill. The plants ranged from 9 or 10 feet high at the back to about 2½ feet in front, sloping smoothly down, the plants healthy, the blooms good, and the colours admirably blended. The first prize was deservedly awarded to it. Mr. J. Townsend, Providence Nursery, Putney, exhibited very creditably also, his plants being well clothed with fine foliage and the blooms good, but with almost too great a preponderance of light shades. He was placed second, and the remaining prize went to Mr. G. Stevens, St. John's Nursery, Putney, the yellow, bronze, and orange shades in his group requiring more relief; one other was shown. Messrs. Laing also won with a smaller group restricted to Japanese varieties, Mr. W. Holmes, Frampton Park Nurseries, Hackney, following.

SPECIMEN PLANTS.

Owing to these being arranged for general effect several of the classes were split up and placed in different portions of the building, and it was somewhat difficult to get the whole of the awards. Mr. Harris, Southampton, won with nine trained specimens, large, healthy, profusely bloomed plants; Mr. J. Watson, gardener to D. Martineau, Esq., Clapham Park, second; and Mr. Easey, gardener to J. W. Jones, Esq., Highbury New Park, third, an extra prize going to Mr. W. Wesker. Mr. Davey, gardener to E. C. Paine, Esq., Stamford Hill, won with four standards, the second prize falling to Mr. Wraight, gardener to W. Johnson, Esq., Upper Clapton, and the third to Mr. W. Clarke, gardener to J. H. Lile, Esq., Brixton Hill. The latter, who showed successfully at Brixton last week, won with six large flowering varieties, Messrs. W. Davey and Wraight following; an extra prize was awarded to Mr. Easey. Mr. Harris won with four plants in not larger than 12-inch pots, Mr. W. Clarke being second; and with trained Pompons Mr. Weston was successful, the second prize going to Mr. J. Mackenzie.

MISCELLANEOUS EXHIBITS.

Space does not allow of more than a passing reference to the fruit and vegetables, which formed a very fine display in the galleries, and in St. Stephen's Hall; nor to the miscellaneous exhibits. But it may be noted that the latter included a beautiful collection of Carnations from Mr. Jennings, gardener to L. de Rothschild, Esq., Ascott, Leighton Buzzard; and a splendid display of Chrysanthemums from Messrs. Cannell and Sons, Swanley, who had stands of Japanese, Incurved, Pompons, Anemone flowered and singles in bunches, these presenting a most beautiful effect, especially the last-named. Mr. Cannell also exhibited fine stands of Zonal Pelargoniums. A small collection of Primulas was shown by Mr. C. Titmus, Leytonstone, and a pleasing display of Cyclamens by Mr. J. May, Twickenham. Messrs. Pitcher and Manda, Short Hills, U.S.A., exhibited a collection of seedling Chrysanthemums, and a stand of Mrs. Alpheus Hardy in capital condition. Horticultural buildings and appliances were exhibited by Messrs. Foster & Pearson, Beeston; Messrs. Peel & Sons, Wood Green; and G. Hayward & Co., Brockley. Messrs. Deards & Co. exhibited their Victoria system of dry glazing, and also heating apparatus; Messrs. E. & F. Newton exhibited their patent system of fitting and glazing; and Messrs. Page & Co. exhibited their patent lead glazing. Garden sundries were shown by several firms. Messrs. Corry, Soper, Fowler & Co. exhibited a stand of Standen's manure; and Messrs. Brangwin & Co. had barrows and garden seats, also heating apparatus. Fibrous peat and other sundries came from Messrs. Wood & Son, and H. G. Smyth; Chrysanthemum cuttings in fertilising moss from Messrs. Beale & Co., New Southgate; ichthemie guano from Mr. W. Colchester of Ipswich; and Mr. J. George, Putney, exhibited a variety of horticultural sundries and manures.

The Floral Committee held a meeting at 12:30 P.M., Mr. R. Ballantine in the chair, when there were present Messrs. E. Sanderson, G. Gordon, L. Castle, R. Dean, G. Addison, C. Gibson, G. Stevens, J. Wright, H. Cannell, and R. Owen. The exhibits were numerous, Mr. R. Owen alone having over 100 blooms, representing many new varieties (silver medal). Certificates were awarded for the following:—

Miss Margaret (W. Boyce).—A large Anemone, with pink ray florets, and pale yellow disc, very handsome.

John Doughty (J. Doughty).—A beautiful incurved sport from Queen of England, of a soft rosy salmon tint, delicate and charming.

Mrs. Alpheus Hardy (Pitcher & Manda).—A Japanese already described.

Lady Dorothy (H. Cannell).—A rosy buff sport from Hero of Stoke Newington.

Madame Alfred Carrière (R. Owen).—A Japanese reflexed with white, narrow, recurving florets, neat and good.

Mrs. S. Colman (R. Owen).—A sport from Princess of Wales, bronzy with a purple tint.

Mrs. Judge Benedict (R. Owen).—A large Anemone, blush ray, pale yellow disk, very high and well formed.

Lune Fleuri (R. Owen).—A Pompon, with small globular dark golden blooms.

Madame Baco (Bettesworth).—A Japanese, large rosy pink blooms, the florets toothed at the points.

Willy (W. Holmes).—An incurved sport from Captivation, yellowish bronze, a delicate tint and good bloom.

CRYSTAL PALACE.—NOVEMBER 8TH AND 9TH.

IT was expected that the earlier shows this season would have the advantage, and it has proved to be the case so far, as those held during the past week were exceptionally good in the number and quality of the exhibits. The date fixed for the annual Show at Sydenham was well judged, it suited a large number of competitors admirably, and the substantial cash prizes induced many to come from a considerable distance. Altogether a very representative Show was provided, the competition in some of the classes being unusually keen. For instance, it is doubtful if fourteen stands of forty-eight blooms have ever been seen at one show and in one class before. This alone would render the Palace celebration of the centenary remarkable. Then, too, in some of the smaller classes, notably for twelve Japanese, there were twenty entries, and others in proportion, so that the greater part of the available space in the north nave was occupied with tables devoted to eut blooms. The effects of the season were visible, it is true, even in some of the best stands, and it was evident that the majority had experienced difficulty in preserving their blooms, or in making up the stands entirely with fresh samples. In some of the freshest there were evident signs of roughness, more especially in the incurved, which in two or three cases were also weak, more particularly in the class for eighteen varieties. But the most notable feature in the Exhibition was the numbers of new exhibitors that entered, and took the honours from older and more experienced cultivators. This occurred in several classes, but their successes were well deserved, and it indicates that the culture of the Chrysanthemum for exhibition has by no means yet reached the limit of its popularity.

Mr. W. G. Head arranged the exhibits to the best advantage, the eut blooms on tables, with small Palms and other plants in the centre and between them, the specimen plants at the end, and the groups at the sides. Beyond the competing Chrysanthemums there were, however, numerous groups of plants grown in the Palace gardens that displayed their attractions in various parts of the building. Primulas were also fairly shown, and the competition in the special classes for Potatoes brought numerous exhibits that occupied a large space.

Cut Blooms.—The chief class in this section was provided for forty-eight blooms, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties of each, or two of one variety, the prizes being £10, £7, £5, and £3. As already stated there were fourteen exhibitors, all showing well, but their positions were pretty clearly defined. Premier honours went to Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth Gardens, Marlborough, who had excellent stands of blooms, comprising the following varieties:—*Incurved.*—Back row: Golden Empress, Empress of India, Lord Alcester, Empress of India, Lord Alcester, Queen of England, Golden Empress, and Golden Queen. Middle row: Queen of England, Jeanne d'Arc, Princess of Wales, Miss M. H. Haggas, Jeanne d'Arc, Alfred Salter, Lord Wolseley, and Miss Mary Morgan. Front row: Nil Desperandum, Princess Beatrice, Refulgens, Mrs. Heale, Hero of Stoke Newington, Mrs. Shipman, Lady Hardinge, and Barbara. *Japanese.*—Back row: M. J. M. Pigny, Madame Baco, E. Molyneux, Boule d'Or, M. J. M. Pigny, Madame C. Audiguier, E. Molyneux, and W. and G. Drover. Middle row: Ralph Brocklebank, G. Daniels, Mrs. J. Wright, Baronne de Prailly, Mdlle. Lacroix, Japonais, Meg Merrilies, and Carew Underwood. Front row: Madame Laing, Bertha Flight, J. Délaux, Avalanche, Balmoreau, Blanche Neige (like Mdlle. B. Pigny), Madame Baco, and Avalanche. The incurved were of good depth and substance, even, fresh, and admirable in all points; the Japanese also were well developed and richly coloured. Mr. Peter Blair, gardener to the Duke of Sutherland, Trentham, Stoke-on-Trent, was a good second, his Japanese being very fine, especially Belle Paule, Val d'Andorre, J. Délaux, Boule d'Or, and Sunflower. The incurved were not quite so even, but were notable for the breadth of their florets. Mr. J. Doughty, gardener to Mrs. Tomlin, Angley Park, Cranbrook, was third, his incurved being very even, fresh, and good, but a trifle small and flat. The Japanese also were very even and bright, but not large.

There were five exhibitors of eighteen incurved varieties, but none was of remarkable quality. Mr. J. Horsefield, gardener to Lord Heytesbury, Heytesbury, Wilts, was placed first with rather small and weak blooms. Mr. P. Blair was a close second, and Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, third. Twelve stands of twelve incurved blooms

were shown by Mr. W. Collins, gardener to J. W. Carlisle, Esq., The Gardens, Ponsbourne Park, Hertford, being first with Lord Alcester, Queen of England, Mrs. N. Davis, White Empress, Mrs. Heale, Alfred Salter, Queen of the Isles, Princess of Wales, Cherub, Lord Wolseley, and Jeanne d'Arc. Mr. C. Ritchings, gardener to W. Lindsey, Esq., Brandries, Beddington, was second; and Mr. J. Wilkins, gardener to J. M. Pearson, Esq., The Grange, Kingston Hill, third. Ten exhibitors staged in the six incurved class, one variety, Mr. Blair winning the premier position with grand examples of Queen of England. Mr. Ritchings followed with Golden Empress of India; and Mr. J. Hewett, gardener to H. R. Macheson, Esq., Hillside House, Hythe, was third.

Japanese were capitally shown in three classes. With eighteen varieties Mr. J. Blackburne, gardener to John Scott, jun., Esq., Elmstead Grange, Chislehurst, took the lead with handsome substantial blooms of the following:—Back row: Boule d'Or, Avalanche (small), A. Molyneux (large), Stanstead White (very fine), Val d'Andorre, and Etoile de Lyon. Middle row:—J. Délaux, M. Bernard, Sunflower, Madame J. Laing, Ralph Brocklebank, and Sarah Owen. Front row: Meg Merrilies, Criterion, Japonais, Gloriosum, Carew Underwood, and Maiden's Blush. Of the ten other exhibitors Mr. C. Cox, gardener to J. Trotter, Esq., Hertford, was second for fine bright blooms; and Mr. T. Skimmer, gardener to J. Aird, Esq., M.P., East Sutton Park, Staplehurst, third, showing good blooms, but not so even. Amongst twenty stands of twelve Japanese Mr. Slogrove, gardener to Mrs. Crawford, Gatton, Reigate, was first with fresh even blooms of Val d'Andorre, Sunflower, E. Molyneux, Maiden's Blush, Mdlle. Lacroix, Mr. H. Cannell, J. Délaux, and Avalanche. Mr. W. Collins was placed second, his back row blooms being very fine. Mr. A. G. Hookings, gardener to S. W. Graystone, Esq., Hurst Side, West Moulsey, secured the third place, good blooms of Sunflower, Ralph Brocklebank, and Golden Dragon being conspicuous. Ten stands of six blooms (one variety) were shown, Mr. P. Blair leading with grand deep blooms of Avalanche. Mr. H. Harker, gardener to H. Shindler, Esq., Oakwood Lodge, Epsom, was second with Japonais, very handsome; and Mr. Shoesmith third with Avalanche. Capital stands of Ralph Brocklebank, Triomphe de la rue des Châlets, Meg Merrilies, and Etoile de Lyon were also shown, the first named variety being exceedingly fine.

With twelve reflexed, not less than eight varieties, Mr. Collins won first honours for deep blooms of the following arranged in this order, Golden Christine, Cullingfordi, Golden Christine, and Cullingfordi. Middle row: Cloth of Gold, Pink Christine, King of Crimson, Peach Christine. Front row: White Christine, King of the Crimson, Peach Christine, and Dr. Sharpe. Mr. Hookings was second with even blooms, and Mr. Felgate, gardener to the Duchess of Wellington, Burhill, Walton-on-Thames, was third for creditable blooms. A class was provided for twelve Anemone flowered, not less than eight varieties (Japanese Anemones excluded), and Mr. M. Sullivan was accorded the first prize for handsome blooms of the unnamed varieties. Back row: Emperor, Lady Margaret, Nelson, and Sabine. Middle row: Sabine, Nelson, Gluck, and Mrs. Taylor, pale purple, of good shape. Front row: La Marguerite, Acquisition, Georges Sands, and J. Thorpe, jun. Mr. A. Combes, gardener to the Earl of Dudley, Himby Hall, Dudley, Staffordshire, was a close second, with even blooms, and Mr. Collins followed. Four beautiful stands of twelve Pommpons were shown, Mr. G. Duncan, gardener to C. J. Lucas, Esq., Warnham Court, Horsham, being first with excellent examples of Marabout, Comte de Morny, Prince of Orange, Prince Victor, Rosea perfecta, Rosinante, Black Douglas, Mdlle. E. Dordan, Mdlle. Marthe, Pygmalion, M. Hoste, and Charles Dickens. Mr. C. Gibson was second, and Mr. E. Chadwick third. Mr. Duncan was also first with twelve Pompon Anemones, admirable blooms of La Marguerite, Mr. Astic, Antonius, Madame Sentir, and Mdlle. Montels. Mr. Gibson was second and Mr. G. Gilbert third. Japanese Anemones were well shown by Mr. M. Sullivan, who was first, followed by Messrs. Combes and Gibson. Only one stand of twelve singles was shown by Mr. Chadwick, who took the first prize for neat, graceful blooms of Miss Mary Anderson, Lady Churchill, Canary, Magenta King, Scarlet Gem, Mrs. W. Woods and others.

The best groups were those with which Messrs. J. Laing & Sons, Forest Hill, secured first prizes in the classes for Japanese and incurved varieties respectively. Both these were very effectively arranged, contained well grown plants of the best varieties and bearing fine blooms. The amateurs' groups were not so tasteful in arrangement as might be desired, in fact in one or two cases they were finished in a careless and clumsy manner. Specimen plants were well represented, the chief prizes being awarded to Messrs. W. Clark, Weston, Cherry, Westcar, G. A. Cooper, and J. McKenzie. The special prizes offered by Messrs. J. Carter & Co., Sutton & Sons, and C. Fidler for collections of Potatoes brought numerous exhibitors, the tubers staged being in most cases of considerable merit.

First-class certificates were awarded to Mr. W. Packman for Chrysanthemums Sunflower, Etoile de Lyon, Stanstead White; Mr. T. S. Ware for Chrysanthemum Mr. Alpheus Hardy; Mr. G. Stevens for new Chrysanthemum Alice Stevens; Messrs. J. Laing & Sons for Chrysanthemums L'Automne, Miss Haggas, Stanstead Surprise, Stanstead White, Etoile de Lyon, and Sunflower; Mr. C. W. Howard for Potato Robert Fenn; Mr. R. F. Jameson for Name Card Holder; Messrs. R. Beale & Co., commended for leaf culture of Chrysanthemums.

BRIXTON.—NOVEMBER 5TH AND 6TH.

THE Brixton, Streatham, and Clapham Chrysanthemum Society held their thirtieth annual Exhibition in the lecture hall attached to the

Congregational Church on Streatham Hill on the above dates. The Show was of about the usual dimensions, and although not large was of an extremely attractive character, a suitable structure and excellence of arrangement combining to provide one of the most pleasing displays of any show of a similar character in the neighbourhood of the metropolis. It is not restricted solely to Chrysanthemums, but foliage and table plants, as well as fruit and vegetables, are asked for, and, interspersed with the flowering plants, lent an agreeable contrast. The blooms exhibited were, on the whole, of fair average quality, Japanese being largely and well represented. In the principal class (for twenty-four), Mr. Mursell, gardener to Mrs. Burton, Leigham Court Road, Streatham, had some capital examples, including Ralph Brocklebank, Stanstead White, La Boule d'Or, and Etoile de Lyon. Messrs. Howe, gardener to H. Tate, Esq., Clapham Common, and Sadler, gardener to Mrs. Lambert, Leigham Court Road, also showed well. Mr. Howe won with twelves, a very fair lot; Mr. Mursell was a close second; and Messrs. Brown, gardener to G. R. Peerless, Esq., Park Hill House, Clapham, and Guyett, gardener to T. Gabriel, Esq., Leigham Court Road, equal third.

Mr. Howe showed incurved extremely well, and won in both classes, the blooms being neat, fresh and well coloured, and Mr. Parrott (gardener to H. Russell, Esq., Clapham Common), Mr. Sadler, Mr. W. Hill (gardener to G. W. Ryder, Esq., Streatham Hill) and A. Upton, 127, Chatham Road, Wandsworth Common, took the minor prizes. A capital stand of large Anemone flowered took the first prize for Mr. Fulbrook (gardener to B. Baker, Esq., Palace Road). The flowers were large and well finished; this was one of the best stands in the Show. Other prizewinners in the cut flower class were Mr. Gibbons, gardener to Lady Pollock, Thurlow, Clapham; Swain, gardener to E. Jones, Esq., Atkins Road, Clapham Park; S. Ashley, gardener to J. Staines, Esq., Leigham Court Road, and C. Livermore, gardener to F. Webb, Esq., Christchurch Road. A first-class certificate was awarded to Mr. Mursell for a well formed bloom of Etoile de Lyon.

Specimen plants were healthy and well flowered. Mr. W. Clarke, gardener to J. H. Lile, Esq., Brixton Hill, won with six, these including a capital Dr. Sharpe. Mr. Cherry, gardener to Mrs. Gabriel, Streatham, was second with smaller plants; and Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, was third. Mr. Clarke also won with three—Dr. Sharpe, Etoile, and Mrs. Dixon. Specimen Japanese were well shown by Mr. Weston in response to special prizes offered by T. Gabriel, Esq. He was easily first; Messrs. Clarke and Cherry equal second. Pyramidal Pompons were not so good, Mr. Clarke's first prize plants not being well flowered. Mr. Livermore (second) had larger plants with the same fault; and Mr. Cherry (third), smaller specimens. Flat trained specimens were well shown by Messrs. Clarke and Weston; and Mr. R. Clarke, gardener to W. Griffiths, Esq., Palace Road, had good specimens.

Ferns were exhibited in good condition by Mr. A. Gidner, Mr. W. Hill, and Mr. H. Wright, and Orchids by Mr. J. Jones, gardener to N. N. Sherwood, Esq., Streatham Hill; Mursell; Wainford, gardener to W. Dent, Esq., Streatham Hill; Ranson, gardener to J. T. Gabriel, Esq., Hill, and Guyett. Several of the exhibitors named also showed well in other classes, but lack of space forbids further reference.

KENT COUNTY.—N V. 6TH AND 7TH.

ONE of the best provincial exhibitions of the season was held at the Rink, Blackheath, on the dates above named. The schedule consisted of about fifty classes, and in all there was very keen competition, many of the most noted growers of the day contesting with each other for the prizes. The larger classes for cut blooms contained nine, ten, and eleven collections, while the display throughout was notable for the absence of inferior exhibits. A few years since a noted horticulturist, while writing on the Liverpool exhibits of Chrysanthemums, said that Mrs. G. Rundle would not be found in a collection of twenty-four distinct in the north, and such is the state of things now in the south, for in this excellent Show the only moderate exhibit was the third prize collection of twelve blooms of Mrs. G. Rundle. The Kent County executive are to be praised for the varied schedule and the substantial prizes offered.

In the open classes for thirty-six blooms, eighteen incurved and eighteen Japanese, distinct, there were nine competitors, all the collections being above ordinary merit. First honours were awarded to Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, for large solid blooms, consisting of Japanese—Avalanche, Mrs. F. Jameson, E. Molyneux, Mons. Bernard, Stanstead Surprise, Sunflower, Etoile de Lyon, Japonais, J. Délaux, Mdle. Lacroix, Marsa, Boule d'Or (very fine), Mrs. J. Wright, Criterion, Dormillion, Mdle. Blanche Pigny, Val d'Andorre, and Marguerite Marrouh. Incurved—Queen of England, Violet Tomlin, Lord Wolseley, Jeanne d'Arc (very good), Emily Dale, John Salter, Mrs. Heale, Alfred Salter, Mr. Bunn, Princess Beatrice, Lord Alcester, Prince Alfred, Miss Haggas (the best flower of this lovely variety in the Show, and there were several good flowers shown), Nil Desperandum, Princess of Wales (fine), Lady Harding, Empress of India, and Mr. Brunlees. Mr. Doughty, gardener to Mrs. Tomlin, Angley Park, Cranbrook, was a very good second, his best blooms being Empress of India, C. Gibson, Jeanne d'Arc, Refulgens, Princess Teck, Queen of England, Ralph Brocklebank, Jeanne Délaux, Belle Paule, and Madame Baco; all good. Mr. W. Packman, gardener to C. E. Shea, Esq., The Elms, Foot's Cray, was placed third for a very even collection.

In the class for twelve incurved, distinct, Mr. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, gained the premier position for a

very neat collection of Empress of India, Miss Haggas (good), Queen of England, Lord Alcester, Lord Wolseley, Jeanne d'Arc, J. Salter, Hero of Stoke Newington, Golden Empress, Refulgens, Violet Tomlin, and Princess of Teck. Mr. Blackburne, gardener to John Scott, Esq., Chislehurst; and Mr. James Hudd, gardener to W. F. Prior, Esq., Blackheath Park, were second and third respectively. Eleven competitors staged twelve Japanese distinct, first honours falling to Mr. J. Blackburne for massive blooms of E. Molyneux, Ralph Brocklebank, J. Délaux, Stanstead White, Val d'Andorre, Avalanche, Etoile de Lyon, Boule d'Or, Mons. Bernard, Mrs. J. Laing, and Criterion. Mr. J. Mitchell, gardener to Mrs. Arbutnot, Bexley, was placed second, his Marsa, Jeanne Délaux, and Madame Baco were particularly noticeable. Mr. Leadbetter, gardener to A. G. Hubbuck, Esq., Chislehurst, was a very good third. For twelve reflexed, not less than eight varieties nor more than two blooms of any variety, Mr. Mease outdistanced all others with Golden Christine (two), Dr. Sharp, Cloth of Gold, King of Crimson (two), Lilac Christine (two), Cullingfordi, Chevalier Domage, and Mrs. Forsyth (two). Messrs. Leadbetter and Tomalin shared the second and third honours. An interesting class was twelve Japanese or large-flowered Anemones, distinct. Mr. Mitchell, who secured the first prize, staged amongst others Gluck, Sabine, Empress, Nelson, and Fabian de Mediana. Mr. Sullivan was a very good second, and Mr. F. Moore, gardener to W. S. Pickersell, Esq., Bexley, third; all exhibiting well.

Classes were provided for six Japanese white, and the same number of coloured. For the first there were eight collections staged. Mr. Hudd took premier position with Mdle. Lacroix; Mr. H. Smith, Rochester, second with Avalanche; and Mr. Pannell, gardener to Macdonald Smith, Esq., Catherham, third with Mdle. Lacroix. In the coloured class a stand of Sunflower from Mr. Moore was well ahead, the colour and substance were all that could be desired. Mr. Briscoe Ironsides was placed second with large blooms of Edwin Molyneux and W. Packman with Ralph Brocklebank. For six incurved one variety, Queen of England from Mr. Blackburne, Prince Alfred from Mr. Briscoe Ironsides, and Mr. Bunn from Mr. Pannell were placed first, second, and third respectively.

In the gardeners' classes for eighteen Japanese, Mr. Blackburne was again to the front with fine blooms of Etoile de Lyon, Sarah Owen, Maiden's Bush, Val d'Andorre, Carew Underwood, Ralph Brocklebank, Stanstead White, Mrs. J. Laing, Gloriosum, E. Molyneux, Sunflower, Madame C. Audiguer, Meg Merrilies, Madame Baco, Criterion, Boule d'Or, Avalanche, and Jeanne Délaux. Messrs. Packman and Mease shared the other awards, in the order of their names. There were nine collections of twelve incurved, and Mr. T. Skinner, gardener to J. Aird, Esq., M.P., Staplehurst, was placed first with massive blooms of Queen of England, Alfred Salter, Prince of Wales, Golden Empress, Jeanne d'Arc, Violet Tomlin, Empress of India, Empress Eugénie, Mrs. Shipman, Mr. Bunn, Barbara, and Lady Hardinge. The second prize fell to Mr. Blackburne, who ran very close; and the third to Mr. Barnes, gardener to A. Bovall, Esq., Grove Park. For twelve Japanese there were ten collections staged, and to Mr. Blick, gardener to M. Smith, Esq., The Warren, Hayes, the first honours fell for Sunflower, Japonais, Jeanne Délaux, Etoile de Lyon, Avalanche, Criterion, Val d'Andorre, Thunberg, Carew Underwood, E. Molyneux, Fair Maid of Guernsey, and Mr. H. Cannell. Messrs. Tomalin and Barnes were placed second and third respectively. Mr. Mease, Mr. Mullins, and Mr. Pannell were placed in the order of their names in the awards for six incurved, distinct. The first prize collection consisted of Lord Alcester, Empress of India, Queen of England, Jeanne d'Arc, Miss Haggas, and Princess Teck.

There was also special prizes offered for twenty-four blooms, eight incurved, eight Japanese, eight reflexed, all distinct. There were nine competitors, Mr. Blackburne taking first place with large developed blooms of Etoile de Lyon, Meg Merrilies, Mons. Bernard, Boule d'Or, E. Molyneux, Stanstead White, Val d'Andorre, and Ralph Brocklebank, Mrs. Shipman, Lord Alcester, Empress of India, Golden Empress, Queen of England, Golden Queen of England, Alfred Salter, Prince Alfred, Chevalier Domage, White Christine, Cullingfordi, Magdeleine Tezier, King of the Crimson, Peach Christine, Bronze Christine, and Amy Furze. Messrs. Mitchell and Packman were placed second and third respectively. There were several other classes set apart for amateurs, who exhibited remarkably well. Mr. Briscoe Ironsides and Dr. Walker from Wimbledon were prominent in nearly all the classes, and their blooms were equal in merit to the rest of the Show.

Groups were very good, and the sides of the large building were fairly crowded with them. Trained plants were not plentiful, but those in competition were all that could be desired. Hand bouquets and cpergnes were tastefully arranged, whilst Primulas, Heaths, and table plants helped to tone down the gorgeous colours of so many cut blooms. Altogether it was a noble display and well arranged.

PORTSMOUTH.—NOVEMBER 6TH, 7TH, AND 8TH.

THE fifth annual Exhibition of this flourishing Society was held in the spacious Drill Hall, Alfred Road, and proved in every respect a decided success. A remarkable advance in the quality of the exhibits was manifest all through, and it is not too much to say that this Exhibition ranks as one of the most important in the kingdom. The cause of this is not far to seek. A special policy by the executive is maintained of offering liberal prizes, and plenty of them. This is a sure way of procuring a good show, and the low prices of admission enable the people flock to the building in extraordinary numbers. No society is better managed than this one. Mr. F. Power, the courteous Hon. Secretary,

is as deservedly popular with exhibitors as he is with the general public, and he is ably assisted by his assistant Mr. B. Miller. The arrangement of the exhibits was as usual in the hands of Mr. J. C. Collins, Milton House Gardens, Waterloo-ville. Hence the good order prevailing everywhere. We are glad to hear the Show was as great a success financially as it was in an horticultural point of view, and it was particularly gratifying to note the extent and excellence of the amateurs' exhibits, some of the dockyard workmen staging blooms of a very high order of merit. We now pass to notice the chief classes in this great and good Show.

Cut Blooms.—These constituted the chief attraction, 2100 large blooms being staged, besides Pompons and singles, which were excellent, while many of the incurved blooms were of immense size and superior in quality. The principal class was that for thirty-six distinct varieties, half incurved and the remainder Japanese. A silver cup, value £25, and £6 in cash was offered as first prize, second £5, third £2 10s., fourth £1. It may be mentioned that Messrs. W. & G. Drover, nurserymen, Fareham, last year won this cup for the first time. It was necessary to secure the same position again to enable them to become the possessors of this trophy, therefore much interest was centred in this class. After a spirited competition and a close scrutiny by the Judges, Messrs. Drover won by the superior weight and finish of the incurved blooms; the Japanese too combined large size with freshness, all being neatly arranged. The winning stand contained the following varieties:—Incurved, back row: Queen of England, Golden Empress, Lord Alcester (very fine, the premier incurved bloom of the Show), Alfred Salter, rich, Empress of India, and Golden Queen of England. Middle row: Princess Teck, Empress Eugénie, weak, Princess of Wales, deep, Mrs. Norman Davis, Novelty, and Lord Wolseley. Front row: Eve, Charles Gibson, good, Nil Desperandum, Jeanne d'Arc, Barbara, and Mrs. W. Shipman, Japanese, back row: Boule d'Or, rich, M. J. M. Pigny, Carew Underwood, very fine, Frederick Marrouch, Mez Merrilies, and Mons. Bernard, finely coloured. Middle row: Baronne de Prailly, Ralph Brocklebank, Mdme. C. Audiguier, Edwin Molyneux, grand, Etoile de Lyon, splendid, and Gloriosum. Front row: Mrs. J. Wright, Jeanne Délaux, Mrs. H. Wellam, Mdme. Baco, Avalanche, and Fimbriatum. Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, was a good second, his stand of Japanese containing many excellent blooms. Stanstead White was of extraordinary proportions, and in excellent form, this being awarded premier honours as the best Japanese bloom in the Show; Album Fimbriatum, Ralph Brocklebank, L'Or du Japon, and Stanstead Surprise. The incurved blooms were rather weak in the back row as compared with the same row in the first prize stand. Mr. G. Trinder, gardener to Sir Henry St. John Mildmay, Dogmersfield Park, Winchfield, was third, showing excellent Japanese. There were seven competitors in the class.

For twenty-four distinct varieties, half to be incurved and half Japanese, the first prize was £5, and three others in due proportion. Seven collections were staged. Mr. G. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was a good first, the blooms being large and well coloured, but too many whites were placed together in the Japanese stand. Incurved, back row: Empress of India, large; Golden Empress, Queen of England, and Lord Alcester. Middle row: Jeanne d'Arc, Prince Alfred, Miss M. A. Haggas, and Alfred Salter. Front row: Jardin des Plantes, Nil Desperandum, Refulgens, and Princess Beatrice. Japanese, back row: Ralph Brocklebank, M. J. M. Pigny, Boule d'Or, and Madame C. Audiguier, large. Middle row: Carew Underwood, Bertha Flight, Soleil Levant, and Edwin Molyneux, rich. Front row: Mrs. J. Wright, Madame Baco, full; Avalanche, and Mdme. Lacroix. Mr. G. Edwards, gardener to the Dowager Countess Enniskillen, Witley Heights, Witley, Surrey, was a good second, the Japanese being of excellent quality.

Five competitors staged in the class for twelve incurved blooms, the best coming from Mr. G. Inglefield, who had large well-finished examples of Empress of India, Lord Alcester, Queen of England, Golden Empress, Miss M. A. Haggas, Prince Alfred, Jeanne d'Arc, Alfred Salter, Princess Beatrice, Jardin des Plantes, Refulgens, and Barbara. Mr. A. Abrahams, gardener to T. H. Wilson, Esq., Hazelholt, Bishop's Waltham, was a close second, having smaller but slightly better finished blooms. For twelve Japanese, distinct, nine entered, the first prize falling to Mr. Trinder for a heavy stand, comprising Boule d'Or, Mrs. F. Thompson, Edwin Molyneux, Avalanche, Madame C. Audiguier, Sunflower, Meg Merrilies, Carew Underwood, Mrs. C. Wheeler, Madame Laing, Japonais, and Ralph Brocklebank. Mr. Inglefield followed with smaller blooms. There was a brisk competition for the prizes offered for twelve reflexed in not less than eight varieties, ten competing, highest honours falling to Mr. G. Russell, gardener to Dr. C. Lewis, Henfield, Sussex, Pink Christine (two), Golden Christine (two), Dr. Sharp, Cullingfordi (two), Cloth of Gold, Pink Christine, Distinction, King of Crimson, and Mrs. Forsythe. Mr. Woodfine, gardener to Captain Boyd, Emsworth House, Havant, was an exceedingly close second with large blooms. Messrs. Drover easily took leading honours with splendid examples in the class for twelve Show Anemones in not less than six varieties—Lady Margaret, Souvenir de L'Ardenne (two), Messrs. W. and G. Drover (two), a richly coloured dark rose variety; Laing's Anemone (two), Gluck (two), Miss Annie Lowe, and Nouvelle Alvéole (two). Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant, was a good second. The last-named exhibitors stood in the same order of merit in the class for twelve Japanese Anemones in six varieties, the former having good blooms of Mdme. Cabrol (two), Fabian de Mediana (two), Margaret Villageoise (two), Margouline

(two), Minnie Chate (two), and Jean Marty (two). Japanese blooms, six of any one variety, were represented by nine competitors, making a good display. Mr. N. Molyneux, gardener to J. Carpenter Garnier, Esq., Rooksbury Park, Wickham, Fareham, secured the premier award with Avalanche, large and solid; Mr. G. Hawkins, gardener to E. Laphorne, Esq., Gosport, being second with same variety in good condition. For six of any incurved variety Mr. Molyneux again took first honours with large firm blooms, superbly finished, of Golden Queen of England; second Mr. H. Adams, gardener to T. S. Edgecombe, Esq., Hinton House, Southsea.

Pompons made a good display in bunches of three blooms each. The first prize was worthily taken by Mr. Russell, amongst ten others, with a good lot, the most noteworthy being Marabout, Comte de Morny, Golden Marabout, Mrs. Holmes, and Rubrum Perfectum neatly arranged. Mr. G. Hawkins second. For twelve bunches of fimbriated, three blooms to a bunch, not less than four varieties, the first prize was awarded to Mr. Hatch, Superintendent Victoria Park, Portsmouth, for a neat lot, Chardonnet, Croesus, and Massange being the most noteworthy. Mr. H. Adams second. A beautiful class. Single varieties, twelve bunches of three blooms each, were best shown by Mr. J. Agate, nurseryman, Havant, his flowers being large, well coloured and neatly arranged, Admiral Sir T. Symonds, Mary Anderson, and Jane were the best, Mr. H. Adams following with smaller flowers. Six entries.

A maiden class for six blooms, provided for those who have never taken a prize for Chrysanthemums, produced sixteen entries. Mr. N. Molyneux was distinctly ahead with large finely finished blooms of Empress of India, Golden Empress, and Queen of England. Messrs. W. Wood & Son, Wood Green, London, offered a silver cup value 5 guineas for three blooms of Japanese and the same of incurved, for which sixteen growers competed. Mr. Inglefield easily secured the trophy with blooms of Golden Empress and Empress of India fully 5½ inches in diameter and 4½ inches deep, with extra large petals, he also staging well Sunflower and Avalanche. Mr. Trinder was second. Mr. W. Colchester, Ipswich, also offered a silver cup of the same value and under the same conditions as in the preceding class. Here again Mr. Inglefield secured the Judge's award with immense blooms, Messrs. W. & G. Drover being a close second. Many classes were provided for exhibitors residing in Portsea Island only, and substantial prizes were offered. The competition was keen and the produce excellent. Similar remarks apply to the amateur classes, but space cannot be found for details.

Plants.—These were quite equal, and in most classes superior in merit to those of former years. The principal class was for eight trained specimens, four incurved or reflexed, and the remainder Japanese. The handsome prizes of £10, £6, £4, £2, produced four competitors. Mr. F. Wakeford, gardener to Mr. G. Harris, Aldermoor, Shirley, was accorded premier honours for plants 3 to 4 feet in diameter, profusely flowered, neatly trained, and well selected. Comet, very full; Mons. Astorg, exceedingly handsome; La Nympe, with fully 200 expanded blooms, and a rather weak Mrs. Dixon. Mr. E. Wills, gardener to Mrs. Pearce, Bassett, Southampton, was a close second with larger plants but not so freely flowered. Mr. Penford third. Six competed with a group of Chrysanthemums arranged in a space of 50 square feet. Mr. Hatch out-distanced his rivals easily with an excellent group of dwarf well-foliaged plants carrying substantial blooms neatly, and yet not stiffly, arranged. Mr. Gale, gardener to Mr. G. Cooke, Langton House, Gosport, was second. Several groups were spoiled by a forest of obtrusive stakes. For twelve plants in pots not exceeding 9 inches in diameter, the number of flowers on each ranging from six to twelve, with upright trained stems 3 to 4 feet high, Mr. Hatch easily secured the leading position. Mr. J. Burridge, London Road, Landport, was second, also showing well. Mr. Hatch followed up his previous success in the class for eight Pompons, distinct, freely flowered and trained, ranging from 2 to 3 feet in diameter. The best single specimen was Peter the Great, with upwards of sixty expanded blooms of good quality from Mr. Wills.

Miscellaneous plants such as those best suited for table decoration, also double and single Primulas, were staged numerous and well, the principal prizetakers being Messrs. Wills, Mr. A. Carpenter, Fratton Road, Landport, and Mr. C. A. Kingswell (gardener to W. E. Gordon, Esq., H.M. Dockyard, Portsmouth). A feature of the Exhibition was the epergnes dressed with berries and autumn foliage, and others with Chrysanthemums, flowers, and Ferns. There was a spirited competition. Mrs. Conway obtained the coveted position in both classes with neatly arranged stands.

Fruit.—Of this it can only be said there was a great and good display. Mr. T. Hall, gardener to Mr. S. Montague, M.P., South Stoneham House; Mr. G. Inglefield; Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore House, Bishops Waltham; Mr. G. Busby, gardener to F. Willan, Esq., Thornhill Park, Bitterne; Mr. J. Chalk, gardener to G. Read, Esq., Salisbury; and Mr. Penford were the most successful exhibitors in the various Grape classes. In the class for fifty dishes of Apples and Pears Messrs. G. Bunyard & Co., the Nurseries, Maidstone, experienced no difficulty in securing the first prize of £5, Mr. J. Watkins, Pomona Nursery, Withington, Hereford, being second. Other classes for Apples and Pears were well filled.

There were numerous exhibits of vegetables, the quality being of the best. Mr. Inglefield secured leading honours in collections of eight and five distinct varieties, with capital produce arranged in an attractive manner. A new class for the best collection of Fungi was made, and created considerable interest. Mr. J. J. Moor, 25, Upper Arundel Street

Landport, secured the first prize with a large and varied assortment, tastefully arranged.

STAINES AND EGHAM.—NOVEMBER 7TH.

DURING the eight years this Society has been in existence it has made considerable advance in the merit of its shows, and that held last Thursday would compare very favourably with any that had preceded it, especially in the quality of the exhibits. The Town Hall at Staines is a commodious building, and all available space was suitably occupied, without crowding, yet leaving room for visitors to inspect the various attractions. The groups were assigned a position near the walls, the tables of cut blooms and small plants being placed in the centre, and the vegetables near the entrance. All the arrangements were most satisfactory, the courteous Secretary, Mr. T. J. Rawlings, being greatly assisted by several members of the Committee, and though the entries were numerous, everything was prepared for the judges promptly.

Cut blooms were excellently shown in most of the principal classes, and in two or three cases the exhibits were so nearly equal in merit that their positions could only be determined by careful pointing. In the class for twenty-four incurved blooms, not less than eighteen varieties, there were five competitors, all staging good examples, but the best were those from Mr. C. Page, gardener to H. P. Leschallas, Esq., Bagshot, who won the first prize. These were admirable, solid, clean, well-developed blooms, well showing the form and finish expected in the incurved. The varieties were as follows—Back row: Golden Empress of India, Empress of India, Alfred Salter, Queen of England, Alfred Salter, Lord Alcester, Prince Alfred, and Emily Dale. Middle row: Mrs. Heale, Mr. Brunlees, Princess of Wales, Lord Wolseley, Golden Empress, Nil Desperandum, Jeanne d'Arc, and Mr. Brunlees. Front row: Barbara, Violet Tomlin, Mabel Ward, Empress Eugénie, Princess Beatrice, Miss M. A. Haggas, Lady Carey, and Eve. The second place was taken by Mr. J. Tomlin, gardener to T. Ashby, Esq., Sunninghill, and his blooms were but a few points behind the first. All were fresh, well-grown specimens, but some were a little wanting in substance compared with the first. The varieties were—Back row: Golden Empress, Prince Alfred, Empress of India, Lord Wolseley, Lord Alcester, Queen of England, Lord Wolseley, and Lord Alcester. Middle row: Alfred Salter, Queen of England, Violet Tomlin, Golden Empress, Mr. Brunlees, Princess of Teck, Queen of England, and Prince Alfred. Front row: Jeanne d'Arc, John Salter, White Venus, Refulgens, Empress Eugénie, Barbara, Lady Hardinge, and Mrs. Shipman. Mr. H. Tomlinson, gardener to F. Ricardo, Esq., Old Windsor, was third with good blooms a trifle rough.

Japanese blooms were capitally shown, particularly in the class for twenty-four in not less than eighteen varieties, six competitors staging collections of remarkably even merit. Mr. C. Page was again first, showing excellent specimens of the under-mentioned varieties, arranged in this order:—Back row: Madame C. Audiguier, Avalanche, Japonais, Madame J. Laing, E. Molyneux, Fair Maid of Guernsey, Ralph Brocklebank, and Stanstead Surprise. Middle row: Sarah Owen, J. Délaux, Meg Merrilies, Val d'Andorre, Sunflower, Madame Baco, Madame B. Pigny, and Triomphe de la rue des Châlets. Front row: George Daniels, Thunberg, Roi des Japonais, Album fimbriatum, Marsa, Duchess of Albany, Balmoreau, and Golden Dragon. Mr. J. Tomlin followed again in this class also very closely, his blooms being fresh and even with the exception of three examples, that were each a point inferior to most of the others. The stand comprised the following:—Back row: Comte de Germiny, E. Molyneux, Madame C. Audiguier, Ralph Brocklebank, Japonais, Avalanche, E. Molyneux, and Meg Merrilies. Middle row: Val d'Andorre, Avalanche, Criterion, E. Molyneux, Boule d'Or, Madame Laing, Gloriosum, and Sarah Owen. Front row: Thunberg, Madame Laing, Sunflower, Belle Paule, Val d'Andorre, G. Daniels, Fimbriatum, and Fair Maid of Guernsey. Mr. F. Sturt, gardener to L. Cohen, Esq., Englefield Green, was a good third.

In the smaller classes there was also close competition. Mr. W. Orchard, gardener to J. C. Fraser, Esq., Thorpe, was successful in several classes. Messrs. F. Sturt, G. Collinge; J. Marcham, gardener to Miss Arnott, Englefield Green; W. Atherley, gardener to E. C. Haines, Esq., Staines; Ager, Bubb, Hutchings, Reddick, and Thatcher securing the chief prizes with praiseworthy exhibits.

For groups Mr. W. Orchard was first, having a collection comprising good quality blooms effectively arranged. Mr. Hutchings followed with dwarf plants, and Mr. Thatcher was third. The prizewinners for plants were Messrs. Reddick, Sturt, Thatcher, and Hutchings. Vegetables also were excellently represented. Apples, Pears, and Grapes were also staged in satisfactory condition, but these, like many others at this and similar shows, cannot, owing to the demands upon our space, be referred to in detail.

EAST GRINSTEAD.—NOVEMBER 7TH.

THE Chrysanthemum Society of this pleasant Sussex town is now merged in the Horticultural Society, of which G. Wyatt Truscott, Esq., is the active and much esteemed President. The Show to be noticed very briefly was held in the Public Hall, a commodious and well-appointed building that was erected in commemoration of Her Majesty's Jubilee, for purposes of instruction and recreation. The Exhibition was not large, but in the cut bloom department, and especially in the Japanese classes, very good indeed, competition being of the keenest possible character. It was hard to find a point of difference in several of the stands, and those exhibitors who were defeated were certainly not disgraced.

In the open class for twenty-four incurved blooms, distinct, four

collections were staged, the successful competitors being Mr. J. Heasman, gardener to Mrs. Oxley; Mr. L. Budworth, gardener to C. Hill, Esq.; Mr. J. Boland, gardener to Sir Edward Blount; and Mr. R. White, gardener to Mrs. Stenning, in the order named. The first prize stands contained the following varieties very well represented—Lord Wolseley, Empress of India, Lady Hardinge, Lord Alcester, Novelty, Prince Alfred, John Salter, Mrs. W. Shipman, Golden Beverley, Baron Beaufort, Bronze Queen, Alfred Salter, Golden Queen of England, Golden Empress, White Venus, Mr. Brunlees, Cherub, Mrs. G. Rundle, Mrs. Dixon, Antonelli, Princess Teck, and Guernsey Nugget. Several of the incurved blooms had lost their freshness, and were doubtless in much better condition a week before the Show.

The open class for twelve varieties of Japanese brought eight excellent stands, the first prize blooms of Mr. Budworth comprising fine examples of Thunberg, Maiden's Blush, Japonaise, E. Molyneux, Madame Lacroix, Mad. C. Audiguier, Comte de Germiny, Triomphe de la rue des Châlets, Bend Or, Jeanne Délaux, Meg Merrilies, and The Daimio, Messrs. Heasman and White followed very closely indeed, and secured the remaining prizes.

In the corresponding local class there were ten competitors, all staging well. Mr. White secured the chief prize with E. Molyneux, Mrs. J. Wright, Thunberg, M. J. Pigny, Mad. J. Laing, Jeanne Délaux, Mad. C. Audiguier, Belle Paule, R. Brocklebank, Madame Lacroix, Boule d'Or, and Japonaise, all in good condition, Messrs. Heasman and Friend being second and third respectively in a keenly contested class.

The best Japanese bloom in the Show was a very fine example of Avalanche, in a stand exhibited by Mr. F. Dunn, gardener to Sir Francis Wyatt Truscott, Oakleigh. Incurved, reflexed, and Anemone varieties were well staged in the local classes by Messrs. Smith, Roberts, Boland, Heasman, and other exhibitors.

Mr. F. Dunn was the only exhibitor of a group of plants. It was in every respect highly meritorious, and unanimously adjudged the first prize. The specimen plants were mostly trained upright for conservatory decoration, and were healthy and well flowered, Messrs. Boland, Dunn, and Harris, Marden and Dawe being the chief prizetakers. Mr. F. Bloodworth exhibited by far the best bouquet.

Mr. W. Prentice, gardener to R. Whitehead, Esq., Paddockhurst, secured the first prizes in all the fruit classes—Black and white Grapes, culinary and dessert Apples and Pears, with very fine blooms. Messrs. J. & A. Cheal staged an excellent collection of fruit not for competition. Great pressure on space precludes further reference to this creditable Show, which was arranged under the superintendence of the active Hon. Secretaries, Messrs. Jenks and F. W. Beck.

SALISBURY.—NOVEMBER 7TH AND 8TH.

THE Wilts Horticultural Society held its fourth annual Exhibition of Chrysanthemums, fruits, and flowers in the new county hall on the above dates, and although the entries were not quite so numerous as last year the Show was, nevertheless, a good one. Messrs. Keynes, Williams, and Co. contributed a large quantity of decorative plants in the way of Palms, Crotons, Ferns, well-flowered Primulas, and Chrysanthemums, which were arranged with good taste and telling effect.

Groups form quite a feature in the summer and autumn shows of this Society. Last year two challenge cups, value 10 guineas and 5 guineas respectively (the former being open to all, and the latter confined to exhibitors who do not employ a regular gardener), were offered for groups arranged in a semicircle not exceeding 10 feet in diameter, and 6 feet in the one class and 8 feet by 5 feet in the other, the cups to be won three times in succession before becoming the property of any competitor. In the large group class Mr. E. L. Brown, Portland House, Salisbury, was first with a capital arrangement, winning the 10-guinea cup for the second time. Mr. Curry, gardener to Colonel Pepper, Milford Hill, Salisbury, was a creditable second; and Mr. J. W. Lovibond, St. Anne Street, Salisbury, was third. With a group of miscellaneous plants Dr. F. W. Coates, Salisbury, was an excellent first with a very tasteful arrangement. Mr. John Curry was second; and Mr. W. H. Pearce, High Street, Salisbury, third. With a group of Chrysanthemums arranged for effect in a semicircle of 8 feet by 5 feet Mr. Charles Haskins, Poultry Cross, Salisbury, won the 5-guinea cup for the second time with well flowered plants tastefully arranged. Mr. Cripps, Salisbury, was a good second; and Mr. Frank Pearce an excellent third. Mr. E. L. Brown had the best four plants of Chrysanthemums; Mr. Haskins the second best; and Mr. Chalk, gardener to George Read, Esq., Westwood, Salisbury, the third best.

Cut Blooms.—In addition to several money prizes two challenge cups of the same value and under the same conditions as those indicated were offered in two classes for cut blooms. In the class for twenty-four blooms, to include not more than two of any one variety, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was first, winning the £10 cup for the second time with good solid stands of bright coloured Japanese, Avalanche, 5 inches deep and 6½ inches wide; Ralph Brocklebank, large and full; Grandiflorum, Duchess of Albany, and Japanese being of fine quality. The incurved blooms were of medium size, even, smooth in floret, and well finished, the best among them being Lord Alcester, John Salter, Miss M. A. Haggas, Barbara, and Jeanne d'Arc. Mr. T. Wilkinson, gardener to C. C. Tudway, Esq., The Cedars, Wells, was a good second. With a stand of eighteen blooms Mr. T. Annals, gardener to Challoner Shenton, Esq., Winchester, won the £5 5s. cup for the second time. His blooms were fresh, but not very large. Mr. H. Snook, Fratton, Portsmouth, was second, and Mr. George Smith, Wilton Road, Salisbury, was

third. In other classes the principal winners were Messrs. Ward, Chalk, H. Osman, gardener to T. Strong, Esq., Harefield, Romsey. Fruit was also well shown, and other exhibits were numerous, but we cannot refer to them now. Mr. W. H. Williams deserves credit for the able manner in which he conducted the arrangements.

ST. NEOTS.—NOVEMBER 11TH.

A CAPITAL show was held in the Corn Exchange, St. Neots, last Monday, being the sixth this Society has had, and it proved to be the best, for the competition was close in the principal classes, and the quality of the cut blooms in several of the stands was admirable. Classes were provided for cut blooms in all the sections, bouquets, buttonholes, baskets of flowers, groups of plants, specimens, fruit and vegetables. A series of classes was also appropriated to cottagers in which vegetables were excellently shown.

The special feature of the Exhibition, however, was the class for thirty-six Chrysanthemum blooms, eighteen incurved and eighteen Japanese in not less than twelve varieties each. Four prizes were offered, the first of £3 being in addition to a handsome challenge cup, value 7 guineas. This cup was offered on the condition that if it be won twice consecutively or three times altogether by the same exhibitor it should become his property. Last year it was won for the first time by Mr. R. Adams, gardener to G. B. Hudson, Esq., Frogmore Hall, Hertford, and the contest was therefore looked forward to with considerable interest. Six competitors staged collections, and though there was a good contest between the first and second, Mr. Adams was again successful, securing the cup with several points to spare. He well deserved his success, for the blooms are cut from a comparatively small collection of plants, and all must be well grown to admit of so many good blooms being staged. The varieties were as follows, arranged in the order named—Incurved, back row: Empress of India, Bronze Queen, Empress of India, Golden Empress, Queen of England, and Lord Wolseley. Middle row: Lord Alcester, Golden Queen, Alfred Salter, Queen of England, Lord Alcester and Alfred Salter. Front row: Violet Tomlin, Miss M. A. Haggas, Princess of Wales, John Salter (2), and Golden Empress. Japanese, back row: Baronne de Prailly, Avalanche, Japonais, Boule d'Or, Triomphe de la rue des Châlets, and Baronne de Prailly. Middle row: Triomphe de la rue des Châlets, Ralph Brocklebank, Madame C. Audiguier, Carew Underwood, Ralph Brocklebank, Avalanche. Front row: Mdlle. Lacroix, Madame Laing, Meg Merrilies, M. Freeman, Madame C. Audiguier and Mr. H. Cannell. All these were fine examples, the incurved deep and well developed, the Japanese large and richly coloured. Mr. R. Petfield, gardener to A. J. Thornhill, Esq., Diddington, was second, his Japanese blooms being about equal to the first, but he lost some points in the incurved, though all were meritorious in a season like this. Mr. J. Myers, gardener to the Earl of Sandwich, Hinchinbrook, was third with a fresh even collection, and Mr. F. M. Anthony, Leicester, fourth with fine Japanese blooms, but rather small incurved.

In other classes there were also some praiseworthy exhibits. Mr. Adams had the best twelve incurved, followed by Messrs. Petfield and Myers, the last two also being respectively first and second with twelve Japanese. Reflexed were shown by Messrs. Myers, Thomas, gardener to Lord Esmé Gordon, Paxton Park; and Mr. Thomas was first with twelve large Anemones. Specimen plants were not well shown, but there were several effective groups, Messrs. Myers, Redman, and Thomas securing the prizes in that order.

A room was specially devoted to bouquets, &c., Messrs. Myers and Beaumont winning the prizes with tasteful exhibits, perhaps a little too crowded, with bouquets of miscellaneous flowers. Messrs. Redman and Myers were placed first and second, the best baskets of Chrysanthemums coming from Messrs. Myers and Thomas. Buttonholes were tasteful and good, Mr. Thomas leading with three, comprising Violets, pink and white double Bouvardias and Tuberoses, Mr. Myers following with red and white Bouvardias, Rose buds and Violets, and Roman Hyacinths with Violets; but this exhibitor was first for table decorations with a charming arrangement. Collections of fruit, Apples, Pears, and vegetables were all shown in excellent condition.

The Secretary, Mr. Ratchelous, who is well known in the district, has aided greatly in the development of this Society, and has an energetic and a thoroughly interested coadjutor in Mr. Plum, who is one of the members of the Committee.

SURREY CHRYSANTHEMUM SOCIETY.—NOVEMBER 11TH AND 12TH.

THE Public Hall in Rye Lane, Peckham, was the scene of the above Society's sixth annual Exhibition, and the numerous groups of plants produced a fairly effective general display. As regards merit, however, there was very much to be desired, and the quality of the cut blooms was not of the character looked for at the present time.

The first prize group in Class 1 was arranged by Mr. W. Dickens, gardener to E. Biever, Esq., Champion Hill. The plants were in moderate condition, and some of the blooms fairly good, but the heavy red curtains on the windows of the hall prevented the colours being properly displayed, and should have been removed or drawn well back. Mr. F. B. Elson, gardener to — Peel, Esq., Loughborough Park, Brixton, was second with equally good materials, marred by overcrowding. The third prize lot was from Mr. Dominy, The Gardens, 23, Basset Road, Nunhead. Messrs. Snod, 29, Bellenden Road Peckham; W. J. Head, 28, Peckham Grove, S.E.; and C. J. Bennetts, 174, Milkwood Road,

Herne Hill, received other awards. Far the best group in the Show was arranged by Mr. Witty, Nunhead Cemetery, but it was not in competition, and Mr. Nix, Danby Street, Peckham, also had a small non-competing group. Of the specimen plants nothing need be said.

The cut blooms were very small and rough. Mr. T. Sadler, gardener to Mrs. Lambert, Streatham, was first with twelve incurved of a very modest character, Mr. Brunlees being perhaps the best bloom. Mr. D. Agate, gardener to Mrs. Walton, Woodlands, Peckham Rye, was second; and Mr. W. Dominy third. Mr. Sadler was a little stronger with Japanese, and again won, the flowers being small, but fresh and well coloured; Mr. Elson was second, and Mr. Agate third. Mr. Sadler's first prize lot of reflexed contained one or two good blooms, but he had no opponent. Mr. Dominy received a third prize for Anemone flowered. In the amateurs' classes the chief prizes fell to Mr. J. F. Vaughan, Mr. Head, Mr. W. S. Harper, Mr. J. B. Worley, and Mr. F. G. Morley. Mr. C. J. Bennetts was first with a bouquet of Chrysanthemums, Mr. H. A. Bultitude second, and Mr. H. Glasscoo third. The same exhibitors, amateur and professional, were successful in other classes. Mr. Springett is the Honorary Secretary of the Society.

KINGSTON-ON-THAMES.—NOVEMBER 12TH AND 13TH.

FOR the thirteenth time the Kingston and Surbiton Society, which has done so much in furtherance of high-class Chrysanthemum culture, has held its annual Show. Like others that have been held in the Drill Hall, made famous by noteworthy contests, the Exhibition was, on the whole, a very good one. There appeared to be a little falling off in groups and specimen plants, but the compensation was ample in the cut bloom classes. The competition was excellent, and the quality, especially of the Japanese and reflexed flowers, superior.

The chief interest naturally centred in the challenge vase class of forty-eight distinct varieties, half incurved and half Japanese. The Kingston eup or vase, the first of the great trophies in the Chrysanthemum world, must be won twice by the same exhibitor before he can become its possessor. The first eup was won by the late Mr. G. Harding, two others by Mr. E. Molyneux, the fourth by Mr. C. Gibson, and last year Mr. E. Coombs, gardener to W. Furze, Esq., Teddington, won the first chance for the fifth, and as he won again on this occasion by a few points only, the coveted trophy is secured.

The blooms in the winning stands were:—Incurved, back row: Empress of India, Alfred Salter, Lord Wolseley, Golden Empress of India, Emily Dale, Prince Alfred, Lord Alcester, Queen of England. Middle row: John Salter, Jeanne d'Are, Miss Haggas, Violet Tomlin, Princess of Wales, Mrs. Heale, Mr. Brunlees, Prince of Wales. Front row: Princess Beatrice, Barbara Baron Beust, Princess Teek, Mrs. Shipman, Lady Hardinge, Perle Précieuse, Mr. Bunn. Japanese, back row: Edwin Molyneux, Etoile de Lyon, Mad. C. Audiguier, Boule d'Or, Stanstead White, Japonaise, Ralph Brocklebank, Avalanche. Middle row: Belle Paule, Marsa, Sunflower, Mrs. J. Wright, Duchess of Albany, Comtesse de Beauregard, Condor, Mr. Elliott. Front row: Mrs. F. Jameson, Florence Percy, Val d'Andorre, Mad. J. Laing, Album Plenum, Gloriosum, Hamlet, George Daniels. Second, Mr. W. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, with splendid Japanese. Third, Mr. C. Beckett, gardener to T. H. Bryant, Esq., Juniper Hill, Dorking. Fourth, Mr. G. Carpenter, gardener to Major Collis Brown, Broad Oaks, Byfleet. Seven collections were staged.

Substantial prizes were provided for twenty-four incurved varieties, in which five collections were staged. The blooms were somewhat rough, but competition close. The chief position was secured by Mr. E. Coombs. Second, Mr. G. Woodgate, gardener to the Lady Wolverton, Coombe Wood. Third, Mr. J. Thorn, gardener to A. Flood, Esq., The Bush, Walton.

The class for twelve incurved, distinct, contained five collections. First, Mr. R. Carote, gardener to J. P. Robinson, Esq., Brookleigh Esher, with Emily Dale, Empress of India, Queen of England, Lord Alcester, Princess Teek, John Salter, Guernsey Nugget, Barbara, Mr. Brunlees, Lady Hardinge, Jeanne d'Are, Mabel Ward. Second, Mr. C. Beckett. Third, Mr. J. Wilkins, gardener to J. M. Pearson, Esq., The Grange. Fourth, Mr. W. Davis, gardener to T. P. Chappell, Esq., Weir Bank, Teddington. In the class for six incurved varieties Mr. A. Folgate, gardener to the Duchess of Wellington, Burhill, Walton, was first, Mr. J. Quarterman second, and Mr. H. Hawkes third. The class for six incurved blooms of one variety invariably produces an imposing display. Mr. E. Coombs was placed first with compact blooms of Violet Tomlin; Mrs. Carpenter second with Golden Queen, large but loose; and Mr. Thorne, gardener to A. Flood, Esq., third with Empress of India.

Corresponding with the incurved were similar classes, and equally good prizes for Japanese varieties. The response was excellent. In the class for twenty-four varieties there were seven exhibitors, Mr. G. Holden, gardener to Mrs. G. W. Izod, The Lammas, Esher, winning first honours with splendid examples of Sarah Owen, Madame B. Rendatler, Sunflower, Madame John Laing, Val d'Andorre, Condor, La Triomphante, E. Molyneux, Charlie Sharman, Meg Merrilies, Criterion, F. A. Davis, Boule d'Or, Marguerite Marrouh, Ralph Brocklebank, Madame Baco, Mr. H. Wellam, Mons. Bernard, Mons. Tarin, Mdlle. Lacroix, Hamlet, Duchess of Albany, John Laing, Avalanche. Second, Mr. W. Mease; third, Mr. J. Thorne; fourth, Mr. C. Woodgate. The class for twelve blooms brought five exhibitors. First, Mr. C. Beckett, gardener to T. H. Bryant, Esq., Juniper Hill, Dorking; second, Mr. A. C. Hook-

ings, gardener to S. W. Graystone, Esq., Hurst Side, W. Mo'esev; third, Mr. R. Carotc, gardener to J. P. Robinson, Esq., Brookleigh, Esher; fourth, Mr. J. Wilkins. The varieties in the prize stand were:—George Daniels, J. Délaux, Madame Audiguier, Etoile de Lyon, Pelican, Boule d'Or, Album Fimbriatum, Val d'Andorre, Sarah Owen, M. J. Laing, Criterion, Elaine.

For twelve reflexed, not more than two of any variety, Mr. G. Carpenter was first with Amy Furze, Cloth of Gold, Cullingfordi, Golden Christine (2), Pink Christine (2). Mrs. Forsyth, Cullingfordi, Peach Christine, Putney George, Phidias. Second Mr. W. Mease, third Mr. A. C. Hookings. Twelve Anemone flowered, six good stands were exhibited, the prizes falling to Messrs. E. Coombs, M. Sullivan, and Mr. G. Carpenter. Twelve Japanese Anemones.—Mr. G. Woodgate was first in this class, Mr. Hookings second, and Mr. M. Sullivan third. Twelve Pompons, Anemones excluded, triplets.—The prizes in good competition fell to Messrs. W. Clark, Woods, and J. W. Read respectively. Twelve Anemone Pompons.—The prizes went to Messrs. Clark, Read, and Carpenter in the order of their names.

First-class certificates were awarded to Mr. E. Molyneux for magnificent blooms of Etoile de Lyon, and good examples of Miss Haggas. A similar honour was accorded for Lady Dorothy, a buff sport from Hero of Stoke Newington, exhibited by Mr. J. Buss, gardener to A. W. Aston, Esq., West Hill, Epsom.

Three miscellaneous groups were staged, Mr. J. W. Reed being distinctly first, Mr. T. A. Glover second, and Mr. J. Buss third.

Mr. H. W. Pitcher, gardener to Mrs. Dunnage, Surbiton, was the first in the Chrysanthemum group class, and Mr. T. Hunt, gardener to Cecil Boyle, Esq., Wimbledon, a close second. Mr. W. Skeet, gardener to J. F. W. Ponsford, Esq., Esher, and Mr. J. Sallows, Twickenham, won the chief prizes for large-flowered specimen plants, and Mr. Reed for Pompons.

Excellent exhibits of fruit, epergnes, bouquets, and amateurs' Chrysanthemums can only be mentioned approvingly as contributing much to the interest of the Show. The Exhibition was well managed by Mr. Woodgate (the Secretary), Mr. Puttock, and other officials.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Houses.*—To have ripe fruit in April houses that are planted with Alexander and Waterloo Peaches may be closed now, fire heat not being applied until the beginning of December. Desirable, however, as are those varieties for forcing to afford very early dishes of ripe fruit, it must be borne in mind that they have not the quality of Hale's Early, Stirling Castle, or Royal George, which started at the same time will not afford fruit until May. The house must be kept close, but admitting air freely above 50°, employing fire heat only to prevent the temperature falling below 35°. The more slowly the trees are excited the stronger will be the blossoms. The outside border must be well protected with litter or dry fern, and if wooden shutters or tarpaulin are available they will be advantageous in throwing off excessive wet. A thorough soaking of water should be given to the inside borders, and if the trees are weakly a soaking of liquid manure not too strong will tend to a more vigorous break. Sprinkle the trees in the morning and afternoon of bright days, but do not keep them dripping with moisture, especially at night.

Succession Houses.—All the leaves are off, except in the latest house, where they should not be forcibly removed, at least not until they part readily from the trees, but when they are all off or come easily by brushing with the hand or a light broom, unfasten the trees from the trellis, prune them, cleanse them and the house thoroughly, and, if need be, paint the woodwork and trellis. Tie the trees to the trellis, leaving room for the branches to swell. Remove the surface soil and supply fresh, give a good watering to the inside borders, thereby having all in readiness for a start when required. The houses should be kept as cool as possible.

Lifting and Root-pruning Fresh Trees.—Any lifting, root-pruning, or the introduction of fresh trees should be performed at once, the planting being proceeded with as soon as the leaves are nearly off the trees to be removed. Trees for planting in houses are best if trained for three to five years to walls or under glass, and prepared for lifting by digging round them a year previously. Such trees can be lifted with an abundance of fibres, and being carefully planted they force well the first season, not being brought on too rapidly, and a moderate crop taken. It is always best to select these trees in preference to planting young ones, which do not fruit much the first two or three years, hence the advantage of planting trees in an already bearing state.

PINES.—Liberal ventilation should be afforded to houses or pits containing young plants whenever the weather is favourable, and avoid damping, as keeping the houses constantly saturated is more injurious than otherwise. Water will not be required frequently, yet the plants must be examined every ten days, watering such as require it, as too

great dryness is more injurious than otherwise, indeed extreme dryness is more prejudicial than is commonly supposed.

In the fruiting department lose no opportunity of closing the house at 85°, keeping the night temperature at 70°, or a few degrees less in cold weather. Remove all the superfluous suckers, retaining one only, the best on each plant. Suckers that appear on successional plants before the fruit is visible should be removed unless increase of stock is urgent. At this time of year it is usual to make new beds of fermenting material for the young plants. Tan is unquestionably the best, a good substitute being found in Oak or Beech leaves, which should now be collected as dry as possible. In forming beds of leaves they must be firmly pressed; tan, on the other hand, should be placed lightly together.

STRAWBERRIES IN POTS.—Possibly there is no greater error in growing Strawberries in pots than placing them in Peach houses and other structures with constantly open ventilators, where from the passing currents of air evaporation is constant and excessive, which only wastes the energies of the plants, and not unfrequently destroys the roots at the sides of the pots. All plants for early forcing should be in frames with a view to protect them from heavy rains only. Those for mid-season and late forcing are as well plunged in ashes in a sheltered situation as anywhere else, having a light covering of bracken or straw in severe weather. Drought is the great bane of the Strawberry, therefore those in frames must never be neglected, the soil always being kept moist.

Plants of Noble, La Grosse Sucréc, and Vicomtesse Héricart de Thury (we name them in the order we have found their merits for early forcing) or other early sorts must be held in readiness for placing in the early Peach house, to which fire heat will be applied early next month, or in the Strawberry house if one exist. If the plants are not so forward as desired it is advisable to make up a bed of leaves about 2 feet high, and place the plants in a frame upon it, packing the spaces between the pots with damp leaves. The bottom heat at the base of the pots need not exceed 65°, the top being kept cool, 50° not being exceeded, and when mild draw off the lights. This will tend to promote activity at the roots and to push the crowns. After three weeks to a month of this treatment the pots must be withdrawn or raised if the bed be still warm, so as to insure the plants bearing the temperature of the Peach house or Strawberry house without check, as would be the case were they taken from a warm bed direct to the shelves. Plants for placing in vineries to be started next month require similar treatment. In case of plants having well-developed crowns and abundant roots the slight bottom heat is not necessary.

Those having the convenience of a house for forcing Strawberries will find it a considerable advantage in very early forcing to start the plants in mild bottom heat, and if a pit be employed having artificial heat, so as to maintain the top heat at 50° in severe weather, keeping them in it until the trusses are pushed clear of the crowns before removing them to their fruiting quarters. Time will be gained, and as a rule very careful treatment is necessary to secure a satisfactory result with the first early forced plants. If worms have gained entrance to the pots dislodge them with lime water, rectifying any defects of drainage.

MELONS.—Except in the latest house these are nearly over. The latest plants have the fruits just beginning to net, and will be ripe some time in December. They need a moist genial condition of the atmosphere to insure their swelling, damping the house in the morning and again in the afternoon, putting on a "chink" of air in the early part of the forenoon to insure the dissipation of the moisture that may have accumulated or been condensed, and induce evaporation from the foliage. The night temperature should be maintained at 60° to 65°, and 70° to 75° by day artificially, advancing as much as can be had from sun heat after the sun passes the meridian. The plants may have liquid manure about twice a week. The fruit will ripen, and prove acceptable even at Christmas and the new year.

Plants that set their fruit early are ripening. They should have ventilation constantly, and a temperature of 70° to 75°, with as much more as can be accorded by day, husbanding the sun heat, but not closing the house, withholding water from the atmosphere and roots.

KITCHEN GARDEN.

FORCING ASPARAGUS.—With suitable heat Asparagus may be forced almost as freely and to yield as many heads in November and December as it will in January or February, but it is of the first importance that the roots be well developed, not under four years old, and in the best condition. Roots that have ceased to be profitable in the open ground need not be forced in the expectation that they will become better under this treatment, but where it has been decided to do away with any old plantations the roots may be forced, if only to obtain a few heads. Forcing need not be entered into so fully at this time as in spring, but all who can spare a few dozen roots should force them at present, or to be ready by Christmas at the latest. Lift roots that are large and well matured. Do not break any of the rootlets in doing so, but keep them entire. Three dozen good roots will give several hundreds of useful heads, and we prefer this to larger quantities at long intervals. If the number mentioned above are put in once a fortnight from now until March there will be a constant supply of Asparagus for the table throughout the winter. The roots may be forced in any ordinary hot-bed, but they produce the heads more quickly in a pit where there is a bottom heat of 80°, and a top temperature of 65° or 70° can be provided. Here the heads will be ready for cutting in from twelve days to fifteen

days after the roots are introduced, and they will bear for a fortnight. The roots may also be introduced to warm corners near boilers or flues, and propagating boxes and pits may be profitably filled with Asparagus. In all cases a layer of soil should be placed under the roots. Pack them closely together in a layer, and cover the crowns with light soil, water them afterwards, and provide the temperatures suggested. If the forcing bed is near the glass and in the full light the heads will be more robust and green than if far away from the glass. Asparagus roots are of no further use after being lifted and forced at this season, and those who have not sufficient to give a full supply in the open at the proper time will make a mistake by forcing too freely, but surplus roots may be employed with advantage.

SOWING PEAS IN AUTUMN.—This is an old-fashioned way of securing an early supply of Peas in spring that is not so much practised now as formerly. It is simple and sure, and merits general attention. We have many means of forwarding Peas sown in spring, but we sow some now, and it is decidedly advantageous to amateurs and others deficient of protectors in spring, as the Peas remain hardy throughout the winter, not requiring artificial protection at any time. Their position should be in a sheltered hut warm and sunny aspect, such as is afforded on a south or east border. The soil must be rich, and not heavy or retentive, as this may cause some of the seed to perish instead of germinating, and the young plants do not grow freely in a stiff wet cold soil in winter. If the seed is sown on the same day as the soil is dug it will germinate better than if placed in a soil that has not been disturbed for some time. Only the round-seeded earliest sorts should be sown now. The rows may follow each other if on a border, but if taken across a large quarter one or two long rows may be sufficient, and we generally find these do as well, particularly when podding in May, as those sown in rows 6 feet or 8 feet apart on a border. Open the drills to a depth of 4 inches, cover carefully, and tread the soil down over the seed. This will make the plants robust, and they will not suffer so much in severe weather as those growing in loose soil. But it is no use anyone sowing Peas in autumn unless they intend taking care of them. If mice are allowed to destroy part of the seed before it has been long underground, or slugs to devour the plants as soon as they come through the soil, it would be better not to attempt culture at this time; but if the same attention be given to them as is generally afforded young crops in spring these November-sown Peas will undoubtedly prove a great boon as a first and cheaply secured crop in 1890.

BROAD BEANS.—Broad Beans sown at this time also will pod before any sown in spring. They succeed in a heavy but not a wet soil. One pint of seed would furnish sufficient plants to produce several dishes of early Beans. Plant 4 inches below the surface, and see that the seed or plants are not injured by the pests that are injurious to the Peas. Young plants allowed to be partially eaten at this season fail to recover like those similarly checked in the spring and summer months.

CELERY RIDGES.—Large heads of Celery are apt to suffer considerably by the soil around them being excessively moist at this season. Heavy and frequent rains soon saturate it, and premature decay follows; but much damage may be prevented by going over the ridges and beating the sides smooth and firm with the back of a spade. This should always be done after frost or whenever the ridges have become loose and porous from any cause.

MUSHROOM BEDS.—Form more of these in sheds as fast as materials can be collected. They will yield a supply of Mushrooms at a time when vegetables are becoming scarce on the table and expensive in the market. This produce never exceeds the demand in winter. Gardeners and amateurs should therefore grow them largely, and many vacant sheds might be profitably filled with beds. The manner of forming these and their principal after treatment is now so well known as not to require detailing here, but for quick returns the beds should be spawned before the heat recedes from 88°, as unless the spawn becomes active at first it will never make satisfactory progress. Extremes of heat and cold, as well as extremes of wet and dryness, should not be allowed, as any of these conditions will injure the crop and check the supply. One of our large beds formed in a cool shed and spawned on October 1st is now bristling with "buttons."

LAND FOR CARROTS AND PARSNIPS NEXT YEAR.—It is well known that Carrots and Parsnips cannot be grown straight and clean in soil that has been manured immediately previous to sowing, as when they come in contact with the rough manure they twist and fork and become deformed. It is therefore desirable that all land for these crops that require manure should have it applied as soon as possible, and if dug or trenched well under the soil it will be decayed by February or March, and the soil will be in faultless condition for the production of the roots, especially if a quantity of soot and a little salt be added to the manure.

yield has been rather under than above the average; but even with that there will be a balance in favour of most bee-keepers.

I am in correspondence with many bee-keepers, and the general tone amongst them is in accordance with the foregoing. One bee-keeper and farmer from the east of Scotland writes, "I shall have less time now to attend to my bees, yet have no thought of giving them up, for they have been again this year not the least profitable item on the farm. I did not lose a single stock last spring, and I have taken on an average 40 lbs. from each stock; the best one yielded me 85 lbs. I put three swarms into one of the 'Lanarkshire' hives, and in less than a fortnight they had over 50 lbs. of super honey in addition to this. All my stocks are extra heavy, and will require no more attention till next summer."

The above has been copied, not because there is anything extra in the quantity of honey gathered, but because it has the ring of candour in it, showing only what has been taken, not what might have been, which would be at least as much again. The labour was reduced, and at the same time the probability of a full harvest next season without expense secured, in every way suitable for a busy man. Some bee-keepers take all the honey they can, and then feed the bees, which swells the profit to outsiders, but conceals the other side. The success of the above bee-keeper dates back some three years, when he became a convert to my system of bee management, as is the case with many others, and I trust that the number will increase.

FOUL BROOD.

Foul brood was ably written about in this Journal thirty years ago, and was fully mastered by "A Renfrewshire Bee-keeper" by the "Purgatorial process," much on the same lines, but a more radical process than what had been practised in Scotland for at least a century before. In all my experience I never knew a recurrence of the disease when bees and hive were properly treated, which cannot be said of other so-called cures.

In giving advice on the treatment of foul brood some writers have stultified their opinions on other things relating to the hive and the bee. For example, it was ludicrous to attempt to cure a colony of bees that was not in existence, because according to the writer's theory bees existed about forty days only, so that before the disease became virulent there would not be a living bee. Happily bees live much longer, and there should not be any half measures to eradicate the disease; but on its first appearance consign the contents of the hive to the melting pot, but not the bees. Disinfect the hive, then bake it and submit it to sulphur fumes, and after a few months repeat the process. In the meanwhile feed the bees; after two days' starving, and after combs are being built destroy them again, and repeat the process a second or third time, after which put the bees into their permanent hive, and if possible discover the cause of the malady.

The causes of foul brood are various, apart from contagion. It arises from some exciting cause or other, overheating being the worst, but damp brings about the same condition of things. It is many years since foul brood existed in my apiary, the first-named cause being the direct one prior to 1860. I had some trouble with it afterwards through infection from bought-in stocks, and have experienced much of it since in other apiaries, every case pointing to overheating or dampness. It is the latter I wish to caution bee-keepers against.

When the floor and the alighting board were in one piece, as is in many cases at the present day, the rain often entered, either from the alighting board or at the back, or some other part of the board that was improperly protected, until the whole of the floor was saturated, which cooled the interior of the hive so much that the perspiration from the bees was condensed inside, upon the combs and walls of the hive, and even so when of straw, while the damp condition of the floor was inimical to bee life, the result being that dysentery was prevalent, and few bees could reach the entrance, the greater part of them dying as they touched the floor, until the doorway became blocked, and the greater part, if not all,

THE BEE-KEEPER

NOTES ON BEES.

THE present year, generally speaking, cannot be said to have been a very productive one in honey, although in certain localities the yield has been abundant. Taking it all over, however, the

of the bees perished, a thing I never saw in my own apiary nor where the floor and hive were kept thoroughly dry. It is well known that I have for many years been advocating the narrow entrance and ventilating floor, an improvement on the eke belonging to the Stewarton, and have never had occasion to clean a floor.

The wide doorway, long since given up by me, is still recommended by some. The evils, which are sure to arise from it in certain seasons, are not unlike what are described above with damp floors. Dry combs, dry hives, and a dry atmosphere are the best conditions for wintering bees, and to secure these adopt the narrow doorway and ventilating floor. We have generally, particularly during winter, a damp atmosphere to contend with, when exposed things such as hives assume a greater or less degree of dampness, according to the nature of the material. Wax is a good non-conductor, but hives are deficient, and honey absorbs much moisture, and renders it injurious to the bees. A wide doorway is conducive to these evils, while it lowers the temperature of the hive, furthering the condensation of the perspired moisture from the bees upon the combs, walls, and floor of hive, thus bringing about the same condition of things as used to be the case in the more primitive hives, which the latter ones under proper management have an entire immunity from. It will be more to the advantage of bee-keepers to adopt the Scotch hive and advice than have need to be taking the advice of others to destroy bees suffering from a malady brought about by keeping them in improper hives and under similar treatment, which doubtless can be averted.

When the interior of a hive is made draughty by having a wide doorway the bees, to keep up the heat, consume more honey, perspire more, which from the coldness of the hive the bees are unable to expel, is consequently condensed inside, and the more protracted the cold is the more injurious it becomes to the bees, with a less degree of chance for their safety. Whatever is done, let it be of such a nature as will tend to keep the atmosphere and hives dry. Bees are always most healthy when they are kept in such a way that the slightest interference enables them to fly out. In this way less food is consumed, breeding goes on more briskly, and bees are strengthened, so that when they fly out they can return with safety and with little effort, while disease will be unknown.—

—LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.

In consequence of the extraordinary pressure that will be experienced during the *Chrysanthemum* season questions cannot be answered with the usual promptitude, and especially those arriving after Saturday. See notice below relative to the naming of fruit.

Books (W. B.).—You will find explanations of most of the terms named in the "Cottage Gardeners' Dictionary," post free from this office 8s.

Early Rhubarb (W. H. S.).—We have no "offer" to make on the

subject of your note. We do not approve of Rhubarb that pushes its growths through "thoroughly sodden manure out of the open yard," as such manure varies considerably, and as a rule impairs the quality of the produce.

Varieties of Cut Flowers (W. P.).—When the schedule reads, as it usually does or ought, "Eighteen distinct varieties of cut flowers," each bunch should consist of one variety only, as to introduce two colours is a manifest evasion of the conditions of schedule, as there is not one, but two varieties, and the stand should be disqualified as containing nineteen instead of eighteen as required.

Trellis for Peach Trees (D. H.).—Having trees on the back wall it is almost a necessity to have the front trellis low, so that the light may pass unobstructed to the trees on the back wall. There is no question, however, of the trees doing best trained to a trellis about a foot from the glass, and by utilising the whole of the roof in that way the fruit is not only much finer, but, taking all things into consideration, quite as much is obtained as when there are trees on the back wall, which in case of your having the trees trained to a trellis fixed to the roof is practically of no use for Peach trees. We have all ours trained to the roof, having trees only in front, and the back wall is used for Roses. The preparation of the border seems to be good.

Sulphide of Potassium as a Remedy for Mildew (S. F. B.).—All the sulphides and sulphur solutions have a discolouring effect on paint, which in some cases is highly objectionable, the discolouration on white paint being such as to preclude its use in structures where appearance is studied. It is, however, an excellent remedy, we using it at the rate of quarter of an ounce per gallon for slight attacks, and ordinarily at the rate of 1 oz. to a three-gallon watering pot of water. It is readily soluble in water, to which it imparts the appearance of milk. Plants, of course, can readily be syringed by laying them on their sides, or in such position as will prevent the soil being saturated, and turning round so as to wet the affected parts thoroughly with the solution.

Hydrochloric Acid for Killing Weeds on Walks (C. S.).—The solution of this acid in water is, as you are no doubt aware, the muriatic acid of commerce, the aqueous acid being also known as spirits of salt and marine acid. It is likely it would prove an effective weed destroyer, but we have no experience of it for this purpose, and it is probable has not been generally used for this purpose. Muriatic acid contains about 32·6 per cent. of pure hydrochloric acid. It is probable that this diluted with 99 parts water would be sufficient to destroy weeds on walks, and being applied in spring would keep them free during the season. That, however, is matter for experiment. We should be obliged by those having experience of this substance for the destruction of weeds furnishing particulars, or any other they have found efficacious and safe.

Chamærops Out of Doors (M.).—The well-known *Chamærops humilis* is the hardiest of Palms in cultivation, and is the only one found in Europe. This in the south of England succeeds well out of doors, and needs no protection; but in exposed cold or damp situations, even around London, it is frequently injured during winter if not protected. The same remarks apply to *C. Fortunei*, which is, however, generally less hardy than the other, though in some gardens it requires no protection. Two of the finest specimens we have seen are at Heckfield, Winchfield, Hants. These were planted in 1869, and now have massive trunks and large heads. The plants or trees have had no protection afforded them since the first winter after they were planted, but they are supported with fresh soil annually, the turf being removed for that purpose and laid down again. It is to this care that must be attributed the large, handsome, glossy leaves. They are well matched in every respect, as they are not only of the same size but of different genders, and are the parents of many plants that have been raised from them since they were established in their positions. No doubt they would succeed equally well in your district if the soil is not too heavy.

Perpetual or Spinach Beet (Amateur).—The following note was published, and it is to that you probably refer. "The Perpetual is not considered so good flavoured as the ordinary Spinach, but if a little extra attention is paid to the cooking it would go unnoticed at the table by many of the less keen judges. It appears strange that such an easily grown plant should be so little known amongst gardeners, as many have exclaimed when passing through the garden here, 'What is that you have there?' when the reply given was Spinach Beet. Here Spinach is most appreciated in early spring and in the autumn and winter. When other choice vegetables are plentiful in summer Spinach is overlooked; that is to our advantage, as the ordinary varieties behave very indifferently on our soil, and I have known the same to be the case in other gardens. It is common in many places to see this vegetable assuming wonderful size, requiring much thinning to do it justice, but it is not so with us. We have tried artificial manures, lime, salt, wood ashes, soot, horse and cow manures, but all to no purpose in obtaining a luxuriant crop of Spinach. In future it is our intention to sow the round variety for early spring crops, and the Perpetual for autumn and winter supplies. Our seed of the latter variety was sown from the second week in May to the middle of June, and we have been able to pick quantities of leaves for some time; in fact, we could have picked all the summer had the demand rendered it necessary, and we hope to continue it for a long time yet to come. When this variety is grown strongly the stems can be cooked and used like *Seakale*; but I have only known it used as such in one or two instances, yet I see no reason why it should not become an established rule."

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. S. R.*).—1, Apparently a Euphorbia like *E. Cyparissias*; 2, Pyrethrum uliginosum, quite distinct from *Chrysanthemum leucanthemum*; 3, *Centranthus ruber*; 4, *Nephrolepis exaltata*; 5, We cannot recognise so small a scrap. (*W. C.*).—1, Insufficient without spores; 2, *Asplenium formosum*; 3, *Adiantum trapeziforme*; 4, *Gymnogramma chrysophylla*; 5, *Polypodium aureum*; 6, *Adiantum macrophyllum*.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. S.*).—1, Perhaps local; 2, Duke of Devonshire; 3, Waltham Abbey Seedling; 4, Golden Winter Pearmain. (*H. F.*).—1, Alfriston; 2, Out of character; 3, Cats-head; 4, Dutch Mignonne; 5, Annie Elizabeth; 6, Schoolmaster. (*A. M. M.*).—The Pear you send is probably Beurré Chairgeau. It was raised at Nantes, and distributed by M. de Jonghe of Brussels. We cannot possibly determine to whom some parcels of fruit belong. When several collections of six and of three fruits arrive, without the names of the senders in the boxes, letters by post do not remove the difficulty of identification. All the fruits are named, that can be named, which reached us before Monday of the present week.

*** In consequence of Dr. Hogg's absence from London fruit sent to this office cannot be named by him during the present month.*

TRADE CATALOGUES RECEIVED.

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Catalogue of Herbaceous Alpine and Hardy Plants.*

Charles Van Geert, Antwerp.—*Catalogue of Plants.*

COVENT GARDEN MARKET.—NOVEMBER 13TH.

MARKET very quiet, with good supplies. Prices unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve..	2	0 to 7	Oranges, per 100	4	0 to 9
" Nova Scotia and			Peaches, dozen	0	0 to 0
Canada, per barrel	15	0 25	Plums, $\frac{1}{2}$ -sieve	0	0 to 0
Cherries, $\frac{1}{2}$ sieve	0	0 to 0	Red Currants, per $\frac{1}{2}$ -sieve	0	0 to 0
Grapes, per lb...	0	6 3	Black "	0	0 to 0
Lemons, case	10	0 15	St. Michael Pines, each	2	0 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Lettuce, dozen	0	9 to 1 3
Asparagus, bundle	0	0 to 0	Mushrooms, punnet	1	6 2
Beans, Kidney, per lb.	0	2 0	Mustard & Cress, punnet	0	2 0
Best, Red, dozen	1	0 2	Onions, bushel	3	0 4
Broccoli, bundle	0	0 to 0	Parsley, dozen bunches	2	0 3
Brussels Sprouts, $\frac{1}{2}$ sieve	1	6 2	Parsnips, dozen	1	0 0
Cabbages, dozen	1	6 0	Potatoes, per cwt.	4	0 5
Capsicums, per 100	0	0 to 0	" Kidney, per cwt.	4	0 7
Carrots, bunch	0	4 0	Rhubarb, bundle	0	2 0
Caniflowers, dozen	2	0 4	Salsify, bundle	1	0 1
Celery, bundle	1	0 1	Scorzonera, bundle	1	6 0
Colworts, doz. bunches	2	0 4	Shallots, per lb.	0	2 0
Cucumbers, each	0	3 0	Spinach, bushel	1	0 2
Endive, dozen	1	0 0	Tomatoes, per lb.	0	4 0
Herbs, bunch	0	2 0	Turrips, bunch	0	4 0
Leeks, bunch	0	2 0			

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms	3	0 to 6	Mignonette, 12 bunches	2	0 to 4
Asters, per bunch, French	0	0 to 0	Myosotis or Forgetmenots		
" dozen, English	4	0 8	doz. bunches	1	6 3
Bouvardias, bunch	0	6 1	Pansies, dozen bunches	0	0 to 0
Camellias, dozen blooms	2	0 5	Pelargoniums, 12 trusses	0	9 1
Carnations, 12 blooms	1	0 2	" scarlet, 12 bunches	3	0 6
Chrysanthemums, dozen blooms	1	0 3	Pinks (various) 12 bunches	0	0 to 0
Chrysanthemums, dozen bunches	2	0 6	Popples, various, 12 bunches	0	0 to 0
Clove Carnations, 12 bunches	0	0 to 0	Roses (indoor), dozen	0	8 1
Dahlias, dozen bunches	2	0 6	" Mixed, doz. bunches	3	0 6
Eucharis, dozen	3	0 5	" Bed, dozen bunches	6	0 12
Gardenias, 12 blooms	3	0 5	" 12 blooms	0	9 1
Gladioli, per bunch	0	6 1	" Tea, white, dozen	1	0 3
Gladioli brecheleyensis, dozen sprays	1	0 1	" Yellow	2	0 4
Lapageria, 12 blooms	1	0 2	" French, per bunch	2	0 3
Lavender, dozen bunches	0	0 to 0	Spiraea, dozen bunches	0	0 to 0
Lilium, various, 12 blms	2	0 4	Stephanotis, doz. sprays	3	0 5
Lilium longiflorum, 12 blooms	3	0 6	Sweet Peas, doz. bunches	2	0 4
Maidenhair Fern, doz. bunches	4	0 9	Sweet Sultan, "	0	0 to 0
Marguerites, 12 bunches	2	0 6	Tuberose, 12 blooms	0	6 1
			Violets, dozen bunches	1	0 2
			" French, per bunch	1	3 2
			" Parme, per bunch	3	0 4
			White Lilac, Fr., per bunch	6	0 7

PLANTS IN POTS:

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6	0 to 12	Ficus elastica, each	1	6 to 7
Arum Lilies, per dozen	9	0 12	Foliage plants, var., each	2	0 10
Arbor vitae (golden) dozen	6	0 24	Fuchsia, per dozen	3	0 9
Asters, 12 pots	3	0 6	Geraniums, Ivy, doz.	0	0 to 0
Begonias, various, per doz.	4	0 13	Lobelia, per dozen	0	0 to 0
Balsams, per dozen	0	0 to 0	Marguerite Daisy, dozen	6	0 12
Caladiums, per doz.	0	0 to 0	Mignonette, per dozen	0	0 to 0
Calceolarias, per dozen	0	0 to 0	Mask, per dozen	0	0 to 0
Christmas Rose	0	0 to 0	Myrtles, dozen	6	0 13
Chrysanthemums, dozen	6	0 15	Nasturtiums, per dozen	0	0 to 0
Cockscombs, per dozen	8	0 6	Palms, in var., each	2	6 21
Dracena terminalis, doz.	24	0 42	Pelargoniums, scarlet, 12	2	0 4
Dracena viridis, doz.	12	0 24	Rhodantho, per dozen	0	0 to 0
Erica, various, dozen	12	0 13	Saxifraga pyramidalis,		
Euonymus, var., dozen	6	0 13	per dozen	0	0 to 0
Evergreens, in var., dozen	6	0 24	Solanums, per dozen	6	0 12
Ferns, in variety, dozen	4	0 18			



THE FLOCK IN WINTER.

UNLESS draft ewes or crones are taken from the home farm flock or can be purchased by selection at so low a price as to render subsequent profit a certainty, we can hardly recommend them for winter folding, for there is the almost certainty of a heavy per-centage of loss, as well as the doubtfulness of any profit except that of fertility imparted to the soil. The frame of a crone may be of large size, but it requires a terrible lot of filling out before it is ready for the butcher, and then the flesh is never so heavy as that of a prime young hogget. This is doubtless the reason why some farmers will have nothing to do with crones, and press them upon the market when the lambs are weaned. We are bound to admit that they often do so both wisely and well, but we have repeatedly found it answer our purpose to purchase crones when good ones could be had.

An important point to be kept well in view at the home farm is a full supply of farm produce for family requirements. It is said that old mutton is a thing of the past, that the taste and liking for it is gone, that sheep are brought to such early maturity that upon many farms wethers see nothing of winter except as lambs, being fully developed and disposed of at seven months old. But let the home farmer who has to supply the table of a connoisseur make a special selection of draft ewes, bring them into high condition in winter folds, and so regulate his supply to the household that the mutton is always well matured in the slaughter house store before delivery, as much attention being given to the date of slaughter as to that of game, and then he will find that old mutton is cared for, and that his pains are well bestowed. So highly is it appreciated that we have known a leg of it to be sent as a present from one connoisseur to another as a tit bit not to be had from the family butcher. Depend upon it there is something more for the home farmer to aim at than just keeping up the regular household supply. It is possible for him to render that supply altogether so superior to the ordinary farm produce that the owner may proudly make presents to his friends of specimens of it as something rich, rare, and toothsome, a veritable *bonne bouche* fit for the table of a prince.

The early maturity of hoggets is both a matter of breeding and feeding. Hampshire Downs were first brought on sooner than other breeds by the use of lamb tups, then came high pressure feeding from the day the lambs began to eat, and that quick return from outlay, so desirable from a commercial point of view, was achieved. The commercial aspect of farm management is by no means to be ignored by the home farmer, and he is bound to give due attention to the profitable management of sheep for sale, and so to manipulate the young stock that each section of it may answer its legitimate purpose. The earlier hoggets have by this

date been sold at ages ranging from seven to nine months ; others that when weaned were turned out on pasture, and with the exception of stubble corn had nothing but green food till Turnip folding began, have now some dry food in troughs regularly, and heavy bills for eake are run up during winter upon many a farm, which tell seriously upon profits later on. We hold that sheep fatten equally well and far more economically upon eorn, which may or may not be home grown. It may answer best to sell a fine sample of corn, and purchase an inferior one for feeding purposes. Whatever may be used it is well to proceed with caution, and not rush into extremes by taking the hoggets at once from grass only to a full dietary of eorn or eake. Our aim is not only to finish the hoggets for market, but to finish the whole of the folding that is required to be done before the ewes and lambs are taken upon the land next spring. The entire matter is one of simple calculation, which may be worked out before making a single fold, and if this were done more generally it would tend to check much rash and unnecessary expenditure upon eake.

We know a great flock-master who at the present time has some £10,000 invested in hoggets, all of them being kept going quietly upon Turnips, with just enough dry food to keep them sound, healthy, and in store condition. They will be gradually dispersed in small or large lots, to be finished in folds by the buyers, into whose hands they will go quite ready for high feeding. The store hoggets are not confined steadily to the Turnips, but are given a daily turn for a few hours on pasture, to which they may occasionally be withdrawn altogether in very wet weather—not, be it understood, to low-lying wet pasture, but to that which is sound and well drained. It is not every farmer who has the much-valued upland pasture to turn to now, but there are few farms where really sound pasture cannot be had.

(To be continued.)

WORK ON THE HOME FARM.

Dairy cows are now being gradually settled in the yards for winter, and they will soon be withdrawn altogether from the pasture, and it will depend very much upon yard management whether the dairy produce continues good throughout winter. We saw recently a small barn that had been converted into a cowhouse, and it appeared to us quite a model building for the purpose. The cow stalls were along each side, with a wide passage down the centre of the building. The entire floor was of concrete faced with Portland cement, that of the stalls sloping gently down to a shallow gutter to carry off filth. The floor could thus be kept thoroughly clean, and pure air was insured by ventilators in the lofty roof, precisely similar to those of a Newmarket training stable. Each ventilator is a capped wooden shaft, with transverse openings at intervals in the part projecting above the roof, with a narrow sloping ledge over each opening to keep out snow and rain. Such ventilators insure pure air, and are altogether preferable to windows or shutters.

Next to a good cowhouse are the yard and open sheds. Yard drains have recently been put to a severe test, and any fault should at once be set right. We like cows to have some exercise daily, and a large sheltered yard—large enough for a stack of litter in the centre—answers best. Many such a stack have we had of bracken, sedges, rushes, and coarse grasses from bog land which cattle would not touch. Such litter requires no other care than to be carted to the heap when dry, and when it can be had straw can be saved for other purposes. The best enclosures for the cow yard are open sheds ; so that these are deep and commodious it is quite immaterial how roughly they are constructed. As we write we have in mind a very home-spun affair ; a lodge we once had built of unsawn timber with the exception of the plate, ridge, and eave boards. The ends and back had larch slabs with the bark on, and the roof with a high and steep pitch was thatched with Heather. On the yard side it was open, but it was so wide as to afford perfect shelter from rain, and there was a low, wide manger all along the back where the cows were fed on wet and stormy days. Get the cows settled now in some such yard for the winter, see that the water is pure, the litter dry, fresh, and clean : see also that the food is wholesome, that udders, hands, and pails are clean for the milking. Try also to have a cow calving at intervals of two or three weeks, and you will do very much to insure good butter during winter.

DYSON'S WOOD GRASS MANURING EXPERIMENTS.

MR. MARTIN J. SUTTON'S interesting series of experiments with different manures on grass have been previously referred to, and the following are some of the results of the experiments :—In experiment A on old pasture land, some of the plots that have been manured every other year have yielded less than the plot that has received no manure

whatever since the commencement of the trials in 1886. The latter yielded 27 cwt. 3 qrs. of hay ; but plot 2, which was manured in 1888 with 1 cwt. sulphate of ammonia, has yielded without dressing this year only 22 cwt. 3 qrs. of hay ; and still worse, plot 3, which had 1½ cwt. of nitrate of soda last year, has afforded in 1889 only 13 cwt. 3 qrs. of hay. This thoroughly supports Mr. Sutton's view that annual dressings do harm to grass lands unless repeated every year. The results are repeated similarly on experiment B, the seven years old pasture, where Cocksfoot has become so abundant, only the effect is not so strongly marked. Plots 7 to 18 in both experiments A and B have received manures of different kinds this year, with the exception of 11, which has remained unmanured. The greatest excess of produce over that of the latter has in experiment A been in plot 10, which received 3 cwt. of guano at a cost of 21s. 9d. per acre, the hay yielded being 36 cwt. 2½ qrs. The next highest yields were 31 cwt. 2½ qrs., on plot 12, manured with 4 cwt. basic einder and 2 cwt. kainit, the cost being only 10s. 6d. per acre, and 31 cwt. 1 qr. on plot 15, manured with 1 cwt. nitrate of soda and three-quarters of a cwt. muriate potash, the cost being 17s. 6d. per acre. The plots similarly manured in experiment B, on the seven years old pasture, made good returns also, the Peruvian guano one yielding 36 cwt. 1½ qr. of hay, the basic einder and kainit one 32 cwt. 1½ qr., and the nitrate and muriate of potash one 39 cwt. 3 qrs., and there was another heavy yielding plot in this section, that manured with 3 cwt. dissolved bones at a cost of 18s. per acre, the yield of hay being 38 cwt. 1½ qr.

Interesting as the above results are, those obtained from Mr. Sutton's new set of experiments commenced this year appeared to be still more valuable, founded as they were chiefly with the object of comparing fresh combinations of manures specially to prove whether kainit, nitrate of potash, superphosphate or basic einder, or what proportions of them mixed are best to be applied in conjunction with sulphate of ammonia and nitrate of soda. The subjoined table shows the yields of those plots which were heaviest, setting them in comparison with the crop of the plot that had nothing. The fact must not be forgotten, however, that one season may be more favourable to the action of certain manures than another season, and basic einder has done better in Mr. Sutton's grass plots in 1889 than it was found to do in previous years.

No. of Plot.	Manure applied per acre.	Cost per acre. s. d.	Weight of hay obtained per acre. tns.cts. qr.
1	Nothing	—	1 13 3½
5	Raw bone meal, 3 cwt.	18 0	1 14 1½
9	Farm dung, 10 tons	60 0	1 16 2½
12	Peruvian guano, 3 cwt.	34 10	2 0 1½
13	Basic einder 6 cwt., kainit 2 cwt.	16 0	2 1 0½
14	Superphosphate, 3 cwt., kainit, 2 cwt.	12 3	1 19 3½
15	Superphosphate, 3 cwt., nitrate of soda, 1 cwt.	19 3	1 19 3
16	Superphosphate 3 cwt., nitrate of soda 1 cwt., kainit 2 cwt.	23 3	2 2 1½
17	Superphosphate 3 cwt., nitrate of soda 1 cwt., muriate potash ¾ cwt.	25 7	2 0 0¾
23	Sulphate of ammonia 1 cwt., kainit 2 cwt.	16 6	1 16 1½
24	Sulphate of ammonia 1 cwt., kainit 2 cwt., superphosphate 3 cwt.	24 9	2 1 3½

All the manures were applied in the spring of 1889. The dung, bones, basic einder, kainit, and muriate of potash were applied to the plots on March 8th. The superphosphate of lime and guano were applied March 18th. The sulphate of ammonia on April 15th, and the nitrate of soda on the 22nd of April.

METEOROLOGICAL OBSERVATIONS.

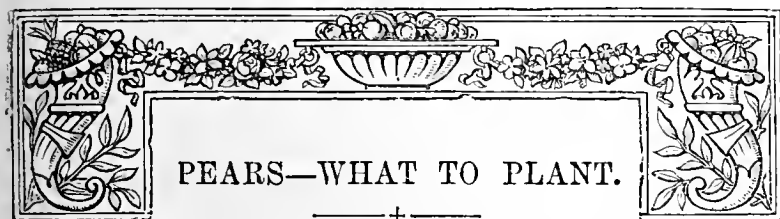
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.						Rain.
1889. November.		Barometer at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature				
			Dry.	Wet.			Max.	Min.	In sun.	On grass			
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.			
Sunday	3	29.767	44.8	48.0	S.E.	45.3	52.9	39.6	56.1	32.3	0.233		
Monday	4	29.822	50.5	49.0	S.W.	45.9	54.9	48.4	67.4	45.0	—		
Tuesday	5	29.846	37.1	36.9	S.W.	46.3	47.8	33.4	66.4	28.1	—		
Wednesday	6	30.317	45.0	42.6	S.	44.9	51.4	35.4	55.9	23.1	—		
Thursday	7	30.499	42.9	42.4	S.	45.1	53.7	41.2	57.0	34.9	—		
Friday	8	30.502	53.0	52.4	W.	46.8	60.3	44.8	97.3	42.4	—		
Saturday	9	30.412	47.8	47.3	N.W.	47.0	55.1	44.9	62.8	40.6	—		
		30.181	43.4	45.5		46.0	53.7	40.8	66.1	36.5	0.238		

REMARKS.

3rd.—Wet all day ; dull damp evening.
4th.—Cloudy throughout.
5th.—Fog early, hazy morning ; bright afternoon, and fog again in the evening.
6th.—Generally cloudy, but some sun in the afternoon ; bright moonlight night.
7th.—Dull all day.
8th.—Bright and mild.
9th.—Slightly foggy early ; fair day, with some sunshine.
The fifth or sixth consecutive week of almost precise ly the average temperature.
Pressure high, and only one day with rain.—G. J. SYMONS.



PEARS—WHAT TO PLANT.

IN TENDING growers for market have had plenty of sound advice offered to them lately in the pages of the *Journal of Horticulture*, and although much of this ought to prove equally valuable to private cultivators I shall yet venture to offer a few remarks for the especial benefit of the latter. Amateurs in particular are often puzzled in the matter of ordering trees, both as regards suitable varieties and the best form of tree to plant. Now there are considerable numbers that are not worthy of occupying valuable wall space, and several varieties that are usually good in quality yet ripen at a time when Pears are most abundant. A haphazard selection may be the easiest way out of the difficulty, but it is the most unsatisfactory in the end. I hold Pears to be the most valuable of all hardy dessert fruit, and that they well repay for any trouble rightly directed which may be taken in their cultivation.

Of early varieties the best is undoubtedly the Jargonelle, and this is seldom satisfactory in the open, but requires unlimited wall space to have it in perfection. The heaviest crops and the finest fruits are obtained from trees occupying the sunny fronts and ends of dwelling houses and outbuildings, which the trees rapidly cover. The next best positions for it are rather high garden walls with a south or south-east aspect. It is a rank grower, hence the need of good space. Williams' Bon Chrétien trained against a wall of almost any aspect seldom fails to produce heavy crops of fine fruits; but as these keep badly, and seeing that standard and pyramid trees are quite as productive, the fruit also being equally satisfactory, only those with plenty of wall space ought to devote any portion of it to the "Williams." Souvenir du Congrès resembles the last-named, and may be grown in many fruit-growing districts to a much greater size. It keeps rather longer, succeeds under any form of training, and may well be grown where large collections are preferred.

Beurré d'Amanlis usually closely succeeds Williams' Bon Chrétien, and is a very serviceable variety; it forms a good pyramid, is a sure bearer, and produces still finer fruits on wall-trained trees. British Queen with us is not a strong grower, but against a sunny wall it rarely fails to bear. The fruit are of medium size, ripening during the early part of October, and they are very buttery and sweet. Beurré Superfin forms a handsome standard, and is very prolific and good in point of quality. Wall-trained trees produce much the finest and most clear-skinned fruit, and on the whole it may be said to merit a place in every collection, however limited. It is an October Pear, and keeps fairly well after ripening. Fondante d'Automne unfortunately ripens at a period when several other good varieties are in season, but it is yet worthy of general cultivation either against a sunny wall or in the open. With us it ripens late in October, and does not keep long.

Pitmaston Duchess has rapidly become very popular, especially among exhibitors and lovers of showy fruit. It succeeds admirably as a pyramid, and crops very heavily. Wall-trained trees, however, are best calculated to produce show fruits, which they rarely fail to do. It is in season during October, and may be kept till the middle of November. There are many varieties I prefer to eat, one of these being Beurré Hardy, which ripens a few days later. This excellent Pear does well either as a pyramid or bush, and merits a place against a west wall. With Louise Bonne of Jersey everybody is acquainted; it forms neat and serviceable pyramids, and

the trees against walls of all but quite north aspects are very prolific and produce very clean handsome fruits. It is an October Pear sometimes keeping good till the middle of November, while the quality is fairly good, though the peculiar musky flavour does not suit all palates.

Marie Louise is even more generally grown than the last named, and may be classed as the most popular Pear in cultivation. Fairly good pyramids and profitable standard trees are frequently to be met with, but the best fruits are taken from wall trees. Any but the coldest aspect suits it, and the very luscious fruit may, if a little judgment is exercised both in planting the trees and ripening the produce, be had daily throughout October and up to the third week in November. Marie Louise d'Ucc'e is quite distinct from the last named, and not equal to it as far as quality is concerned. It, however, forms capital pyramids, and is one of the surest bearers.

Doyenné du Comice, in season at much about the same time as Marie Louise, is even preferred to the latter by many good judges of fruit. Altogether it is a grand Pear, and appears to thrive and bear well in any position, on any stock, and however trained. It should be included in the smallest selections. There are so many varieties, several of which I have named, available during October and the early part of November that it would seem superfluous to add more; yet I must not omit Maréchal de Cour. This is really an excellent variety, being suitable for either pyramids or wall training, is a good cropper, and the fruit is large, juicy, and sweet.

After the supplies of the foregoing varieties are exhausted there is a falling off, there being but few really good midseason and late Pears. Huyshe's Prince Consort succeeds well against sunny walls, and forms a good pyramid or bush. It is a good bearer, and the fruits are available about the middle of November. With us it is rather firm and dry, but as a rule the quality is fairly good. Beurré Diel we cannot dispense with. The quality, though better than usual this year, is never first-rate, but we have no surer bearer against walls of different aspects, while the fruits are of attractive appearance and available during the whole of November, and sometimes a fortnight later. Beurré Bachelier has long been a favourite of mine, and in my opinion ought to be more extensively grown. Good pyramids of it are sometimes to be met with, but such fine varieties merit wall space. The trees bear well, produce large fruits, which are of excellent quality, late in November, and keep well after they are ripe. Winter Nelis is one of the smallest varieties in cultivation, but there are few or none to surpass it as far as quality is concerned. It forms a neat pyramid, but very rarely is the fruit from such trees of any value. The finest fruit is obtained from double-grafted trees trained against sunny but not necessarily south walls. There are few better croppers, and the fruit ripens late in November, frequently keeping good till the end of December. Glou Morceau, another well-known variety, is very rarely presentable from pyramid or bush trees, nor can it always be grown to perfection against walls. With us it never fails, and many of the fruits are fairly large, clear-skinned, and luscious, the season usually extending from the end of November till January. Beurré d'Arenberg succeeds remarkably well as a pyramid or standard, and wall trees crop equally heavily and surely. The fruits, unless freely thinned, are rather small, and at their best are of fairly good quality during December and the early part of January.

Josephine de Malines must be included in limited lists, being one of the most valuable late varieties. It is only fit for training against walls of different aspects, and rarely fails to produce moderately heavy crops of medium sized fruits which, as a rule, ripen during January and keep good till the end of February. It promises to be very late this season, and may require a little heat to assist in the ripening. Easter Beurré varies surprisingly. It is generally very prolific, but in many instances the quality is second rate. Young wall trees produce much the best fruit, and with us pyramids are a failure; nor does it keep much after January

Bergamotte d'Esperen succeeds well as a pyramid or bush, there being no heavier cropper in cultivation. The fruits are rather small, and of fairly good quality as late as March. Much the same remarks apply to Olivier de Serres, this variety keeping even later. Jean de Witte is also small, but it is sure cropper either grown as pyramids or wall-trained trees. We have a large specimen against a wall facing north-east, and this rarely fails; it keeps till April and is fairly good in quality.

Beurré Clairgeau, though much grown, is fit only for stewing, and the same may be said of Duchesse d'Angoulême and General Todleben. Gansel's Bergamot is gritty; Doyenné Boussoch very large and handsome, but mealy unless eaten quickly; Van Mons Léon Leclerc, though handsome and good in quality, ripens when there are plenty of other better varieties available; but room ought to be found for Napoléon in large gardens. Beurré Bosc is sometimes good in quality, but as a rule is much too gritty, and Thompson's keeps but a short time. Hacon's Incomparable is a fairly good November Pear, and sometimes keeps well into December. Knight's Monarch, where it ripens well, is very delicious, and is especially good at the present time, but who can account for or prevent the premature dropping of the bulk of the crop? Beurré Sterckmans is unreliable, but is good this year. Nec Plus Meuris generally bears well, though in most instances is nearly all core. The best stewing Pears are Black Worcester Catillac, Spanish Warden, and Uvedale's St. Germain. Remarks on the selection of trees must be deferred.—FRUIT GROWER.

SILENE SCHAFTA.

THE *Silenes* or Catchflies are among the most ornamental of our rock plants, and the above-named species, while it cannot be called either a new or rare plant, has a great claim for consideration in respect of its late period of flowering. The most enthusiastic of the lovers of Alpine plants cannot deny that the rock garden in autumn is comparatively deficient in bloom, and from July to September this little *Silene* opens its flowers to our admiring eyes, showing us that with its aid the rockery need not be devoid of brightness.

The late-flowering Catchfly was first brought before the public by Dr. Hohenacker, who published an account of it in the "Proceedings of the Imperial Natural History Society of Moscow" for 1838 under the name of "*Silene Schafta* of S. G. Gmelin," and stated that "it grows naturally in rocky places, on a mountain called Keridach, in the district of Suwant, in the Russian Province of Talsch, at the height of from 2500 to 4000 feet, flowering in October."

S. Schafta was sent to the Horticultural Society of London in 1844 by Dr. Fischer, who obtained it from the Botanic Garden at Dorpat, and was described in the Journal of the Society as a "beautiful little herbaceous plant, producing a great number of spreading slender downy stems, which form compact tufts, and are terminated near the extremity by four or five bright purple flowers more than an inch long." "Of these flowers that at the extremity of the shoot opens first, and those below it one after the other in succession, so that the branches are by degrees quite covered with blossoms. Its stems do not rise above 6 inches high." It is rather curious to observe the various statements as to its colour. Mr. Wooster says it is not purple, but pink; another author, in "*Alpine Flowers*," calls it purplish rose; and Glenny's "*Handbook to the Flower Garden*" calls it deep rose. For my own part I am disposed to agree with Wooster, although it is certainly darker in colour than it is figured in that author's "*Alpine Plants*," to which work I am indebted for the history of the plant. It is impossible to be dogmatic on the question of the precise shades of flowers, and no one need envy the one first called upon to describe the colour of a new flower.

S. Schafta differs greatly in appearance from the hard compressed-like tufts of the other Alpine *Silenes*, having a more trailing habit, which renders it admirably suited for hanging over rockwork or for a raised edging. Its strictly herbaceous habit prevents it being of much value where dwarf evergreen plants are required, but from its first showing its leaves until the termination of its flowering period it forms a neat and attractive object. The flowers are about half an inch across, and are produced so freely that little foliage is seen. It is perfectly hardy in the south of Scotland, and probably so throughout Great Britain, and is of easy

cultivation in light rich soil. The plant may be propagated by division, but the best method is by means of seeds, which are cheap and easily obtained.—S. ARNOTT.

NOTES ON OUTDOOR TOMATOES.

THE past summer has been a very good one for Tomatoes grown out of doors. With us the plants made strong growth free from disease, and the yield of fruit from nearly all varieties was extremely good. Tomatoes have become very popular in the last few years, so popular in fact that the supply is not equal to the demand, nor is it likely they will ever cause a glut in the market, as unlike Apples, Plums, and most other fruits, they do not ripen all their fruit at one time, but continue to ripen a few every week over a lengthened period. There is no reason why everybody with a small amount of glass and a moderately sheltered position out of doors should not successfully grow good Tomatoes, provided the plants are properly prepared previous to placing out. Our summers are so short that the best results can only be obtained when strong plants that will begin setting fruit as soon as placed out are used, and these should be ready by the last week in May or the first week in June. Many failures in outdoor Tomato culture can be traced to this cause alone—viz., planting thin lanky objects that have been too crowded whilst under glass. More fruit will be obtained from six sturdy short jointed plants than from two dozen weakly ones that have been drawn up in strong heat and much crowded.

For our main outdoor crop we sow seed thinly in 6-inch pots early in March, and place them on a shelf near the glass in a temperature of 60°. When the seedlings have made a few rough leaves they are placed into large thumb pots and returned to the same house. They are kept close for a few days to give them a start, after which abundance of air is given, to ensure slow yet sturdy growth. When the pots are full of roots the plants are placed either singly into 6-inch pots, or two are placed in 8-inch pots, always pressing the soil in firmly, for that induces a short-jointed growth and a disposition to fruit. As long as the plants are in the house they are kept well up to the glass, and abundance of air admitted on all favourable occasions. The first week in May we stand them out of doors in front of a south wall and cover them at night with tiffany, and in very cold weather the tiffany remains on all day. They grow very little the first week or ten days, but then it induces them to show fruit, an object which should always be secured before planting outdoor Tomatoes.

Our best crops were obtained from some planted in front of a Melon house with a south aspect. On the hard path and 14 inches from the wall we fixed planks 1 foot wide edgewise, which served to keep in the soil from the other part of the path. We placed in 4 inches of rough ballast for drainage, and on this 6 inches of compost, consisting of equal part of rather heavy loam, Mushroom manure, a fine ballast with a good sprinkling of bone dust. The plants were placed 1 foot apart on the 1st of May, and protected with tiffany on cold nights for a fortnight. Each plant was secured to a stake 9 feet high, at which height the growths were stopped; and this had the desired effect of concentrating the whole strength of the plants on the fruits and ripening nearly the whole of them before the frost set in. Of course the plants were grown on the single stem system, and all side shoots removed whilst very small, for I am convinced there must be neither loss of time nor material to ripen good crops of Tomatoes out of doors in the midlands.

Other plants from the same as above were placed out the last week in May under a south wall between fruit trees, and they carried very heavy crops but did not ripen so well as those planted on the path. This we attribute to the fact that they had unlimited room in a cold heavy soil. Outdoor Tomatoes should have very little soil to grow in, and the roots if possible should be under control.

We grew several varieties, all of which were good and remunerative, but we accord the premier position to a variety obtained from Messrs. J. Veitch & Sons, named Ham Green Favourite. It would be difficult to conceive a more perfect Tomato for outdoor culture. With us it set freely and swelled enormous crops of beautiful bright red smooth fruits, weighing from 8 ozs. to 12 ozs. each. It is very solid and heavy weighing, and has all the characteristics of a first class market fruit. Mr. Crocker, who is said to be the fortunate raiser of this splendid variety, is to be congratulated upon giving to the public a Tomato, the all-round qualities of which will only be surpassed with difficulty.

Carters' Traveller finished off a good crop of fruit. It is a very smooth medium size variety with a thin tough skin, and so far as appearance goes is a model.

Hackwood Park carried an enormous crop, but the fruits were very distorted and ugly, on which account we shall not grow it out.

of doors again. It sets freely through the winter, and under glass the fruits are a better shape.

Hathaway's Excelsior is a good variety for outdoor cultivation. In shape and colour it resembles Ham Green, but it did not grow so strongly nor carry so heavy a crop as that variety.

Holborn Ruby is a model Tomato for eating uncooked, it being the best flavoured variety I have ever tasted; it is, however, too small for market purposes.

Trophy gave us a few very large handsome fruits, but it is a shy cropper out of doors.

With Tomatoes there is no necessity for growing a host of varieties to maintain a continuous supply, hence what gardeners want is to find out the best all-round variety, and then grow it to the exclusion of all others. In this matter gardeners can help each other greatly by sending to the Journal the results of their trials and experiments with new varieties, provided they are based on well arranged methods.—J. H. W.



ORCHID NOTES.

DISA GRANDIFLORA.

No attempt should be made to hurry these plants or failure will certainly result. They appear to grow slowly (this is natural), and those who may be growing the plant for the first time may be tempted to push them on more rapidly. We have been in this position, and advise others to give them liberal supplies of water, a circulation of air daily, and a night temperature of 45°. Nothing is gained by giving the plants a higher temperature, but the reverse; it may force the growth up weakly for a time, when the foliage will turn yellow and the plants often dwindle away. In too close an atmosphere the plants frequently become a prey to aphides. These under any circumstances soon ruin the plants, and should be destroyed by sponging the leaves with a weak solution of tobacco water. The worst enemy we have to contend against at this season of the year are small slugs. They soon do much damage, and should be sought for attentively every evening. This appears to be the only means of eradicating them. We have removed the living sphagnum from the surface of our plants, and for some time lately have sprinkled soot over the surface of the pans every evening just before dusk. This certainly dislodges them; they come out in quantity a few minutes after the soot has been applied. Care is needed that the soot is not placed upon the foliage; no harm results from dropping it on the surface of the soil.

MASDEVALLIAS.

If *M. tovarensis* has not been shifted from the *Odontoglossum* house in which it has been grown during the summer no time should be lost in removing it to warmer quarters. It must have a temperature of 55° to 60°, in which it will pass the winter safely. Our plants stand very well in a warm corner of the *Odontoglossum* house, but in this position the temperature never falls below 55°. *Masdevallias* will require considerably less water than has been given them up to the present time. Mischief is often done by supplying them too liberally with water during the winter months and having too low a temperature. These are the evils that cause the foliage to be spotted. The soil about their roots should not be destitute of moisture, and the temperature must not be allowed to fall, even during severe weather, below 45°. Watch for slugs; they are particularly fond of the tender flower spikes as they appear. If aphides exist in the house they are certain to establish themselves on the young spikes; they must be cleared off at once by the aid of a soft sponge and clear tepid water.

DENDROBIUM HETEROCARPUM.

No advantage is gained as far as we have been able to discover by removing this Orchid to a cool structure. It will bear this treatment without injury, but it neither adds to the flowering properties of the plant nor increases the strength of its growth the following season. Cool treatment is given only when we are anxious to retard for any length of time a number of plants. This Orchid is generally rested with us at the coolest end of the *Cattleya* house. It will bear being kept very dry without displaying the least signs of shrivelling.

CŒLOGYNE CRISTATA.

Plants that were well ripened early by exposure to light and a good circulation of air during their last stages of growth, and then placed in a cool house, have their flower spikes nearly 2 inches long. A few of these we are introducing into a temperature of 60°; in fact, they are taking the place of the late plants that are ready for removal to cooler quarters. Less water will be needed while in this position, but on no account should they suffer from an insufficient supply. The temperature of the *Odontoglossum* house will be ample to induce them to rest. If they are kept too dry their pseudo-bulbs shrivel, which is detrimental to the production of large flowers and pseudo-bulbs another year. The atmosphere in which they are placed while given cool treatment should not be too moist. The driest position of the *Odontoglossum* house should be selected. In too much moisture during the period of inactivity the tips of the leaves are liable to turn black. This Orchid does splendidly suspended from the roof of a warm house while making its growth. It appears, however, to do better in pans than on blocks or in baskets. For all that require more root room another year suitable pans are being prepared with three small holes just below the rim, through which the wires for suspending them will be secured. Ordinary pans, hard burnt, are such as will be used with no holes in them except at the bottom and the three already named. Pans with a quantity of holes round the sides have an objectionable appearance when they turn green. For suspending purposes we shall use no more soft, or what are termed porous pots. Pot washing takes up considerable time, and the use of porous pots and pans for these plants is only a fad; they do equally as well in hard burnt ones, and the labour of keeping them clean is much less. Hard pots are a long time before they display signs of turning green. We have had some keep perfectly clean the whole season.—ORCHID GROWER.

ORCHIDS AT FOREST HILL.

THE following Orchids are now flowering in Messrs. John Laing and Sons' Forest Hill Nurseries:—*Cattleya exoniensis* (true) and *Bowringiana*; *Cypripediums* *Harrisianum*, *Haynaldianum*, *insigne*, *insigne albo-marginata*, *insigne sylhetense*, and *Sedeni*; *Dendrobium Jamesianum*; *Masdevallias* *candida* and *Veitchi*; *Oncidium* *Forbesi*, *ornithorhynchum*, *tigrinum*, and *Wentworthianum*; *Odontoglossums* *Alexandriæ*, *constrictum*, *fragrans*, *grande*, *Oerstedii* *majus*, the distinct *Insleayi*, and its beautiful variety *splendens*, which is much superior to the ordinary type and is very rarely seen.

VINE-PRUNING AND WINTER-DRESSING.

It is not to teach the learned, but the several inquiring amateurs who are now essaying the winter treatment of their Vines, and are not too confident of the procedure best adapted for their purpose, that a few grains of instruction are hereby scattered. Vine-pruning must be adapted to the age, condition, and peculiar state of the Vines. On these circumstances the system of winter pruning must be founded. There are two chief forms of pruning the Vine—the short spur and long rod. There are also modifications of these; or the two plans may often be seen in combination.

Let us start with a young Vine planted in the spring with a new rod to the top of the house. "Is that rod to be cut down?" "Considering the permanent welfare of the Vine, undoubtedly." "But will not that rod bear fruit if left alone?" "Certainly, if a stout perfected rod; moreover, the best bunches will not be near the bottom, but nearer the top of the house." "Then why cut it down? If it kills itself with work it may." That is the mode of reasoning of a self-knowing man, fond of asking advice and never following it. Picking up advice here and there, and going somewhat different from all, he gets a first show of Grapes, and glories in the result as being a "plan of my own," having particular care to emphasise the "my." The Vine stands. It carries some good bunches of Grapes, but many of the lower buds break stubbornly, some not at all, and the side growths, although pinched, are weak. Well, they ought not to have been pinched. Never mind, a lot of fruit is had, but the Vine is ruined. That is killing the goose which would have laid the golden eggs. Another stance: If, instead of pinching all the side shoots, at the base one is selected, the eye just at the bend where the cane turns down to the rafter generally breaks freely, and this allowed to grow to the top of the house unchecked, will make a good rod at the same time the other carries the Grapes. Now, if the rod-bearing cane is cut clean out when the Grapes are all cut, the young rod will be ready to bear more. That plan carried out year by year is the long-rod system pure and simple. But some may say, "Oh! everybody knows that." I beg pardon, everybody does not know, and it is just these who require the information, and to whom alone it is offered. To

assume that everybody knows everything, and that descending to simplicities is derogatory to one's reputation, is the great error of the times. If everybody knows a thing, why pen a line? and if we find one who looks with contempt on a thing plainly put, depend upon it that man is a hunter after information if he has need of it. But to proceed. That plan will produce a quantity of Grapes, especially if not followed out as stated, but if the first year's growth had been boldly cut down to the base of the rafter, and a year's grace given to get root-power, that seeming year's loss is really an eventual and permanent gain.

Those who want a large quantity of Grapes in a small space of time, and who have no reserve—nursing canes—will find this long-rod system give them; moreover, it is more than possible they will be less troubled with shanking and other ailments than by the spur system. Mind, that is for amateurs who do not understand the whole *rationale* of Vine-culture sufficiently to work without aid, and who desire a quantity of Grapes as easily as possible, regardless of the way it is produced or the appearance of the Vines producing it. By that plan the bulk of the fruit will always be at the top of the house. To obviate this, take up two reserve rods by the side of the fruiting cane. Stop one nearly halfway up, and let the other go the full length. That will fill a house with fruit from the bottom to the top of the rafters. The half-length rod may extend to the top in the year of fruiting, and it will make a fine bearer the following year. Another from the bottom, stopped halfway up, will make sure for the lower part of the house, and so the roof may be covered with fruit year by year, every bunch from wood of the year preceding, no spurs having had time to form. With a good root-power to begin with, this plan is capable of producing an immense quantity of Grapes. It is the simplest of all forms of Vine-pruning. Anyone can do it who can cut away a dead Raspberry cane after fruiting, and train one young shoot halfway up the stake for bottom fruit, and another the full length for top fruit for the next year's work. The bottom half of the rod reaching to the top should, however, be divested of eyes, and the eyes on the bearing portion be thinned out to about 15 (not less) inches apart. This can be done in the spring by disbudding, and is essential in preventing an overcrowding of foliage, the most common of all mistakes in Vine culture by inexperienced persons.

Leaving for the moment the long-rod or Raspberry system, let us look at the spur plan of treatment. The young rod of the first year should, if at all weakly, be cut boldly down to the bottom of the rafter, and not be allowed to bear a bunch. Strength will thus be concentrated to produce one fine young rod which, its other treatment being right, is sure to follow, and will lay the foundation for a good constitutioned Vine for permanent work. If, however, the cane is stout, strong, and well ripened, containing not more than a speck of pith, but is hard, round, and bright, then it may be allowed 2 to 3 feet of rafter, and to carry two to four bunches. It will perfect these, and make a fine extension cane at the same time without any danger of overcropping; indeed the fine cane is the proof—the safety-valve that all is right on that side, the bunches being, as it were, the steam-governors. If these press heavily, if the rod does not progress freely, relieve pressure by removing a bunch or bunches as required, making above all things sure that the sap has a full and abundant flow upwards to form a fine extension growth of vigorous cane. After this, yearly extension may at each winter's pruning be shortened to about a one-fourth length of rafter—that is, if the rafter is 16 feet, leave 4 feet. In very strong canes more is quite permissible, but as a rule that is a safe approximative guide. Now these side shoots which have borne the bunches must be shortened. This shortening forms the spurs. Cut very smooth and clean almost close to the main stem—that is, leaving only the lowest prominent eye that has had the assistance of a leaf. There can be no mistake there—the lowest eye that has had a leaf at its base to be left, the rest cut away. If the Vine is in a good state that eye is sure to push and show fruit. If this close shaving should frighten, two clear eyes may be left; this will give two shoots, and both will or ought to show bunches. In this case always rub one off, and let it be, if possible, the one farthest from the main stem. Some people will prune a Vine for twenty years, and in that time not produce a spur of 3 inches, while others will add to the spur at the least an inch a year. Close pruning is the best for this reason, that the lateral flow of sap is less impeded. Why? Look at an old standard Rose and its knotty swellings by yearly cutting. Note the narrow, restricted, twisted, curling sinuosities of the sap vessels. It bears small blooms, and well it may. Cut its head off, and see the immediate gross vigour of the after-growth. The impediment to free sap movement is removed; the narrow tortuous channels are substituted by free, open, sap courses. So it is with the Vine or any other plant. The plant—the Rose, the Vine—may not be in a bad state of health; the roots may be sound, and the foliage not indicative of any disease; the soil may not be

seriously at fault, but may be reasonably well supplied as the food store; yet, if not breaking down by disease, the plant may come far short of the perfectness of constitution desired, and fail in the character of bloom or fruit. The fault there lies in the transit of sap of food. In the Indian famine, Rice was plentiful while the natives starved, but a free channel of communication being provided the plague was stayed. I am not sure that I have seen this idea expressed before, but many an example of a stubborn scraggy tree tells me there is something in it. On that account close spur pruning is preferred to a longer mode, which in half a dozen years results in a curled knuckled accretion of wood and tissue through which the sap can only circulate by a sluggish crawl, inadequate to the real requirements of the fruit and foliage of the Vine it is attempting to feed. But an example may be in mind that Vines with long twisted spurs bear good and satisfactory fruit. Very well. Go on with the mode that answers. Nothing succeeds like success, and never change a plan that is satisfactory by whomsoever the change may be proposed.

Before closing these notes I should like to remark in the matter of a young Vine, that I do not think the common practice a wise one of divesting a young cane of all its eyes from the ground up to the rafter—that is, not sweeping them off at a stroke the first year. The upright sashes of houses may be from 4 to 6 feet. That portion of the cane is not often required to bear fruit; still, for a year or two it is preferable to pinch a few shoots, and have a little foliage there rather than leaving the stem absolutely bare. The rod of a Vine so trimmed never thickens in the same proportion as the upper portion of the stem. The sap channels are contracted, and often a rod will form a protuberance of incipient roots at the base of the rafter where foliage commences to get the nourishment it needs, and which the contracted vertical portion of the stem cannot supply. A little foliage down to the very ground will change all this. The stem thickens freely, and affords a sufficient medium of conduct for the free unimpeded sap-flow. A young Vine so managed will be as thick at the base, even thicker, than at any other part of the rod; but divest it of eyes the first year, 5 or 6 feet up from the bottom, and nothing can prevent it becoming thickest at the top, like a ladder reared wrong end upwards. In that case all the best fruit will be at the top of the house; in the other it will be equally good to the very bottom. This is not theory but practice.—J.

DORYOPTERIS PALMATA.

SMALL plants of this Fern, in neat little pots, are very ornamental and useful for decorative purposes, owing to the distinct appearance of the foliage. The examples shown by Messrs. J. Veitch & Sons, in their collection of table plants, were very notable, and it might well be introduced where variety of leaf character is admired. The fronds differ greatly in size; in young plants they are only a few inches across, but in older and stronger specimens they attain a height of 10 or 12 inches. They are of a bright glossy green colour, deeply divided in palmate fashion. The Fern is an evergreen from tropical America, and requires the temperature of a stove or a warm greenhouse, with a compost of peat and sphagnum and good drainage.

PLUMS.

[A paper read by Mr. T. Francis Rivers at the Horticultural Club, Tuesday, November 12th, 1889.]

THE Plum is, I think, destined to be one of the most important of our economic fruits, if we can establish the fact that fruit growing will be a profitable source of income in these islands; there is, however, little doubt that a fair profit is derived and will be derived from the employment of land for this purpose, although orchards can never take the place that seems to be claimed for them, by those who have never practically undergone the expenditure of capital necessary to succeed in this as in other occupations, which depend upon the millions rather than upon private consumers for the disposal of produce. Theoretically an orchard containing some 500 trees planted, as I think they may be planted, 9 feet row from row, and 9 feet in the rows, will produce, after a certain period of years, from one-half to one bushel per tree, worth 6s. to 10s. per bushel, according to the season in which it is sent to market, the early and late Plums realising a higher price than the midseason fruit. Theoretically also one grain of Wheat will produce three or four ears, each ear containing some thirty or forty grains. Altogether the gross produce, therefore, of a grain of Wheat seems to promise an enormous return, but the returns of the cultivators of land do not, however, show the enormous profit which in theory they ought to receive, and I may say that the practical cultivation of

fruit will disappoint the theorists who are unhappy enough to embark a large capital under the idea that certain crops will be realised. It is, however, very certain that with a suitable soil the cultivation of the Plum will give a handsome return, but the first condition of success must be in the choice of soil. It is perfectly well known to all practical cultivators that a calcareous soil is absolutely necessary, and although lime can be supplied by artificial means the non-calcareous soil cannot compete ultimately with that in which lime is a natural ingredient. This is recognised by Andrew Downing in his exhaustive book, the "Fruit and Fruit Trees of America." In a paragraph treating of soil he says, "The Plum will grow vigorously in almost every part of this country, but it only bears its finest and most

niceties of cultivation, and it is generally supposed that a Plum tree will grow anywhere, and, as a matter of fact, when planted for the supply of an ordinary household, both for the kitchen and dessert, the choice of sorts is an important matter, the Plum being so generous when well preserved that it will provide the table with a wholesome and delicious fruit all the year round. I will for convenience divide the use of the fruit into two sections—the dessert and the still room. Taking the dessert first, the earliest of these which ripens when the Bigarreau Cherries have become a source of regret, as things to look back to, is the Jaune Hâtive, or White Primordian, a pretty little yellow Plum, which surprises from its precocity, but is not valuable for any other quality, and has now almost fallen out of cultivation.



FIG. 55.—DORYOPTERIS PALMATA.

abundant crops in heavy loams or in soils in which there is a considerable mixture of clay. In sandy soils the tree blossoms and sets plentiful crops, but they are rarely perfected. It is also undoubtedly true that a heavy soil is naturally the most favourable one. In certain parts of the valley of the Hudson, near Albany, where the soil is quite clayey, the Plum is healthy, productive, and delicious, while in adjacent districts of rich sandy land it is a very uncertain bearer, a convincing proof of the great importance of clayey soil for this fruit." For clayey soils I think we may read calcareous. He also says, "We have found common salt one of the best fertilisers for the Plum tree, as it greatly promotes its health and luxuriance." I confess that I have never had the courage to apply common salt to my trees, considering the disastrous effects of salt generally upon fruit trees.

People are, however, more interested in sorts of Plums than in the

Rivalling this sort in precocity, and infinitely superior in flavour, we have the Early Favourite. This is a delicious Plum, which in warm seasons will ripen on a pyramid at the end of July, and on a wall during the middle of the month. The Early Green Gage is a very pleasant addition to the Plums of this month. It is not quite equal in flavour to the recognised Green Gage, but it is exceedingly good. I have lately been able to make an addition to July dessert Plums by the Stint. This is very rich and good, and is so dwarf in its habit that it takes no more room than a good sized Gooseberry bush. The Précoce de Bergthold, Early Mirabelle, and St. Etienne are all pleasant early Plums, but too small for useful cultivation.

In August we are well provided with dessert Plums; the earliest to ripen is The Czar, followed by the De Montfort, Early Transparent Gage, the Oullins Golden Gage, Denniston's Superb, Mallard, McLaugh-

lin's, Yellow Impératrice, Green Gage. The Oullins Golden Gage is sometimes placed as a market Plum, and therefore a culinary fruit. Grown on a wall it attains a very large size, and is one of the most delicious, being singularly delicate in flavour. It was imported some years since from France, and was raised, I believe, in the district of Oullins, near Lyons, in France. The tree grows rapidly and vigorously, and a specimen tree produced some years since about 10 bushels of fruit, which were sold at 9s. per sieve. This was about twenty years since; the profit derived from one tree, multiplied by 200, seemed to promise very fairly; they were planted, and in a few years the 200 trees were as large as the original, and are now capable of bearing the same quantity. These trees have never paid their expenses; the fruit is too soft for carriage, and the wood in this country never appears to be capable of ripening enough to give the necessary vigour to the bloom, and my 200 trees instead of producing, as they ought, £4 10s. per tree, will have to be destroyed to make room for other kinds. These are some of the chances of fruit growing. The dessert Plums of September are numerous. The Green Gage will not be over, and we have the Bryanstone Gage, a later variety of the Green Gage; Golden Esperen; the Purple Gage, the Jefferson, Kirke's, Violet de Galopin, Angelina Burdett, Decaisne, Reine Claude de Comte Atthems, a very fine Plum of recent introduction; Guthrie's Late Gage, Boulouf, Abricoté de Brauncau, Transparent Gage. All these are fine dessert Plums, and will certainly suffice for the dessert table during September. In October the list of dessert Plums becomes attenuated, the Late Transparent, the Reine Claude de Bavay, Golden Transparent, Coe's Golden Drop, the Blue Impératrice, Ickworth Impératrice, and Grand Duke will last during the first fortnight of this month, Late Rivers coming at the end.

Although the Plum takes rank as a dessert fruit, I think this quality mainly exists in the varieties of the Green Gages, and its real importance lies in its economic value as a culinary and preserving fruit, and here it is unsurpassed. It is very hardy, enormously productive, and forms an important article of food, and therefore always commands a leading position in the fruit markets. To obtain a good price it is important to plant those sorts which are either early or late, but it is of course inevitable that these conditions cannot always be maintained. Owing to the good fortune of my father in raising a very early fruit I have been successful in realising a good price, and the Plum which has done me yeoman's service is the Early Prolific or Early Rivers. In some years this fruit has been gathered on the 20th July, in ordinary summers the gathering commences the last week of July. The next to ripen is a seedling of my own, The Czar, which has become almost as popular as the Early Rivers. I have recently raised three early Plums, which I think will prove valuable for market. These are the Bittern, Curlew, and Heron. After The Czar I have The Sultan, a very large red Plum; then the Belle de Louvain. With this Plum the glut sets in, and the market is amply supplied with Victoria, Diamond, Mitchelson's, Belgian Purple, Prince of Wales, Prince Englebert. These are the principal midseason market Plums. The later market Plums which generally give an increase of price are Pond's Seedling, Autumn Compôte, Archduke, and the Late Orleans. I find the Early Orleans so delicate in the skin that it is difficult to pack without injury, and that noble looking fruit, Cox's Emperor, is liable to the same defect; this latter bears such quantities of heavy Plums that they rot on the tree in damp weather. The last Plum to gather from the tree is a variety from Yorkshire, this is the Wyedale. The fruit will hang until the end of November, and although very acid to the last, it is pleasant to be able to gather fresh Plums.

The Monarch, a recently introduced Plum, I believe will be a very valuable market Plum. It is ready to gather generally about the 25th of September. It is a very large purple fruit, hardy, and of excellent quality either for preserving or cooking. The Grand Duke is another late seedling; the fruit is very large, and on a wall it attains a very good flavour. I do not, however, think that it is desirable to plant it on a large scale for the orchard—the fruit is too heavy to resist the autumn gales. The Autumn Beauty or Belle de Septembre is a very valuable late Plum, and in some soils succeeds well, but I think it does not flourish in all districts.

The Mirabelle Plums are not at present grown in England for preserving, but I believe that a considerable industry exists in the neighbourhood of Metz for the preparation of the delicious preserve known as the Mirabelle de Metz. There is no reason why this industry should not be carried on in England, as the Mirabelle ripens and bears freely in this country. The fruit makes a singularly delicate preserve. During the last year or two my trees, which bear very freely, have been attacked by blackbirds, which appear to have only recently discovered

their excellence. Seedlings which I have raised from this Plum vary in a singular manner. One of the seedlings has produced a Plum resembling the Green Gage in size and flavour, rendering the original parentage of the Green Gage less obscure. Another seedling bears a small rose fruit, very pretty and ornamental.

There is, I think, a very considerable field open for drying Plums. We already possess the Impératrice, but they ripen rather too late, as I believe that for drying Plums sun heat is required as well as stove heat. Amongst my numerous seedling Plums I have discovered some which appear to me to fulfil the conditions required for drying, and as they ripen in August there will be time for the sun to assist in the process. One of these seedlings resembles exactly the Guimaraens Plum, so popular in Portugal for preserving, so that I hope some day to rival the delicious preparations of the convents. There will, I am sure, be ample room for us, and I shall not take away their business.

I may say that my soil consists of clay and strong loam lying upon a subsoil of drift clay and cretaceous gravel and sand, and that it has been trenched 2 feet deep on an average, and that previous heavy dressings of farmyard manure were applied, which has not yet been exhausted by the trees.

The abundant crops produced by the Plum and the energy required to produce the hard shells protecting the seed affect the vitality of the tree, if crops of fruit are frequently produced. It is not necessary to plant at any great distance, my own plantations are, as a rule, 9 feet row from row, and are dwarf standards. The tree is impatient of pruning, and when fruit is produced in quantity it is hardly necessary to prune at all. I, however, suppress the gross shoots, which are occasionally produced, apparently in sheer wantonness. These are dangerous, as they disturb the balance of the tree. All pruning should be done in summer or early autumn. In the severe winter of 1870, having nothing for some of my men to do, I set them to prune some of the lower branches of my trees, with the most disastrous results. Nearly every wound resulted in canker. It is a lesson which I have never forgotten.

The Kelsey Plum, which seems to be attracting some curiosity, is a Japanese variety, which has been planted to some extent in California. A correspondent to whom I wrote some time since, and who happened to be a Devonshire man, informed me that he thought it might succeed in the south and west of England, but he thought it too tender for general cultivation. It is the size of an ordinary Elruge Nectarine, with very solid flesh and indifferent flavour. It may possibly succeed as an orchard house fruit, but it remains to be seen whether it will prove a desirable acquisition. The dessert Plums attain a very high flavour when grown in pots, and they may be placed out of doors to ripen, and an annual crop can be insured. They form a very pleasant addition to the fruit garden under glass. An orchard house full of Plums alone is very ornamental, as the colours may be alternated, and fruit gathered from the beginning of July to the middle of October.

Espalier and wall trees produce remarkably fine fruit, but on some walls the tradition has arisen that the old-fashioned Green Gage is extinct. This is a mistake, arising from the fact that on old trees a few fruits have been produced which have developed to a very large and luxurious condition. The Purple Gage is also a curiously rich Plum, but is generally shy in bearing.

WINTER CUCUMBERS.

CUCUMBERS, like many other garden products, appear to be valued just in proportion to their scarcity. If by some slip of the tongue of an assistant an idea becomes settled in the kitchen that Cucumbers are scarce in the garden the kitchen people will become especially alive to their importance, and every order sent to the gardener will begin with Cucumbers. If there is one season more than another when Cucumbers are really scarce, and at times especially valued, it is during the months of December, January, and February. I have generally passed through these months tolerably comfortably by commencing preparations in good time, and thus mostly avoided any serious scarcity; and, if scarcity at times has occurred, by keeping as much as possible the knowledge of that circumstance to myself.

Cucumbers for fruiting during the winter should be planted at once, and the plants should be strong to begin with. I sow the seeds during the last week in July, and grow the plants under the influence of all the light and air they will endure, with the object of producing woody stems and medium-sized thick leaves—not large flabby foliage.

It is no use attempting the growth of winter Cucumbers unless well-heated houses are provided (I mean houses containing a suffi-

cient amount of piping to preserve a night temperature of 70° in severe weather without violently heating the pipes). That temperature may not always be required, but it is none the less necessary that the pipes should be able to produce it. Overheated pipes promote red spider, weakly growths, and deformed fruits. In addition to pipes for affording bottom heat I like a good quantity of dung and leaves, and the Cucumbers like it too. A bottom heat of 80° to 85° is a suitable temperature for the roots.

Soil, of course, is important. It should be fresh, good, and rough. Chopped turf just blackened with soot I have found suitable; if at all poor, one-third of horse droppings—old Mushroom-bed manure—may be mixed with the loam. A great bulk should not be employed at once. Commence with a small hillock for each plant, and surface-dress weekly or whenever roots protrude and ask for fresh food. Active surface roots induce healthy fruitful growth, and open—previously warmed—turfy soil and warm water secure active roots. Water must be given according to circumstances. It must at all times be sufficient, at no time excessive.

Temperature, ventilation, and atmospheric moisture are important elements in winter Cucumber culture, and not much less important is bright clean glass. A night temperature of 65° is a safe one, with just a chink for air in the top ventilators. During very severe and also dull weather the thermometer may fall to 60° at 6 A.M. The day temperature should be 5° or 6° higher by fire heat, and should reach its maximum at 9 A.M. That is important. The sun heat may rise to 80° to 85°. Watch for this, and bottle it up by early closing; it will save coals and produce green foliage (which red spiders do not appear to like), and green Cucumbers, too, which look well anywhere—on the plants or the table. As the temperature increases so let the moisture increase; this will be insured by the troughs on the pipes when the heat is from the fire alone, but with sun heat the walls and paths occasionally need damping. Syringe on favourable occasions. The water must not hang about the plants during hour after hour. One good syringing weekly is more effectual than daily dampings. Prevent red spider appearing if possible. Perfectly clear soot water is a deterrent; it is also stimulating to the plants.

Great watchfulness of the weather at night, early morning attention, cautious admittance of air, intelligent guidance of heat and moisture, are the chief essentials to success in winter Cucumber culture.—R. G.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 337.)

Not many months before that event in English history of no small importance, the revolution of 1688, Charles Cotton died in St. James's, Westminster, where he probably was sometimes resident, and may have had a house, also a garden there. It is likely, however, that the chief of his experiments in gardening were made at his abode in Derbyshire, on the banks of the far-famed Dove, the place being Beresford, and here he was visited by Isaak Walton, to whose "Complete Angler" he contributed the second part. A man evidently not wanting in genius, master of several languages (ancient and modern), a composer of poetry, and great in gardening as well as in angling. We see him in another aspect when we also view him as an officer in the Guards, and more than once mixed up in duels. A moderate sized book he published in 1675 represents the state of knowledge at that date on the subject of fruit culture, and he gives full directions, resting evidently on practice, not theory, how the various sorts of fruit trees should be planted, pruned, and cultivated; whether they yielded "stoue fruits or *pepin* fruits," as he puts it. Cotton was apparently the author of the original definition of an espalier—"a hedgerow of fruit trees against a latticed pole or stakes;" and of a centre-spalier—"a hedge of fruit trees against a wall." He descants upon the benefits of brick walls, especially in exposed localities, because they afforded warmth and shelter to the larger fruits. When trees are planted in the open ground he commends the quincunx order of planting—that is, the putting four to form a square, and one in the centre. October is the month in which he advises that young trees should be set and older trees removed, showing that one fancy of the early horticulturists had not lost its influence—*i.e.*, limiting to one month what might be done in several, or varied according to the species of tree. Cotton advises that the surface soil round fruit trees should be frequently turned over during the summer. Modern gardeners will not spare the time, but if it could be done at least occasionally many insects in their chrysalis stage would be destroyed. The use, not of nails, but of other points, formerly called "sheepshanks," is recommended by him, to which the shoots can be tied.

The close of the eighteenth century is a time which draws our

attention to the village of Chelsea—for village it then was, though now a part of the great metropolis—since it is associated with important horticultural experiments. That lengthy pile of buildings, Chelsea Barracks, which overlook the gardens of Chelsea College, is probably on the site of what we should call the home garden of Ranelagh House, but the gardens extended over many acres round, and, if Bowack is to be believed, were regarded as the finest in England, the space considered. Lord Ranelagh was of Irish descent, and a peer who gave much time to the promotion of horticulture. He had greenhouses with glass roofs (then a great novelty), and laid out his beds and walks in a manner that excited much admiration. As I previously pointed out, what were styled "greenhouses" two hundred years ago had not glass roofs, and even far on in the eighteenth century they were often without them, though they might have large side windows. It has been stated that an orangery at Woollaton Hall, near Nottingham, constructed about 1696, was the first glass-roofed house in Britain, but the matter is doubtful. A visitor, one Mr. Gibson, who during the reign of William inspected the gardens near London, tells us that Lord Ranelagh's kitchen garden was provided with seats! A remark made by another author, that he saw a part of the grounds of the Apothecaries' Company arranged in the Irish style, suggests that this particular style, whatever it might be, was introduced by Lord Ranelagh. He had in his ground a wilderness, so-called then, or what we should now call a shrubbery, which remained intact many years, giving name afterwards to "Wilderness Row." This quaint old peer would be astonished could he see the modern shrubberies and clumps of trees in the locality he once tried to beautify.

But the apothecaries' garden at Chelsea, still existent, and which was the fourth of the botanical gardens in England, is of great interest, as being far more important than its precursors in stimulating research for exotics; it also formed a centre, to which gardeners resorted to see novelties, and to inquire about methods of propagation or culture. There had been a garden at Westminster for the cultivation of medical and other plants during the middle of the seventeenth century, and in the year 1676 this place was the property of a Mrs. Gape. We should like to know whether she was a cultivator of plants, or simply the owner of the land, for the fact is very prominent and seems singular that in the early annals of horticulture the female sex scarcely figure at all, though subsequently gardening became such a favourite pursuit with ladies. However, the apothecaries purchased the collection of plants in this Westminster establishment, and they became the nucleus of their Chelsea garden, which was to receive so many exotics in after days. It would be curious to see a greenhouse of two centuries ago, but the oldest extant at Chelsea does not date as far back, though there are antiquated structures there, which tell us of a time when forcing and the nurture of plants in winter taxed seriously the resources of the gardener. According to Evelyn, in ten years "there had been obtained a large assortment of rarities, and in the autumn of 1685 he saw a conservatory of the newest design, vaulted beneath, and kept warm all the winter by a stove below, so that the windows might be opened even in hard frost. A year or two after Gibson, already mentioned, reports that Watts, keeper of the garden, had allowed much of it to fall into neglect, and though he was a man of ability he was removed from his post. This garden seems to have been the first place where an endeavour was made to have an arrangement of growing plants in which they were grouped to exhibit their natural affinities. Several new evergreens were introduced here. Probably the number growing in Britain did not exceed a dozen when William III. landed, excluding of course our few native species. It was about this date that in the London nurseries they began to raise forest trees and hedge plants by striking slips, or from seeds.

There was an increased demand for evergreens, it is observable. Owing to the prevalence of the Italian style of gardening during the seventeenth century certain species were in favour, such as the Myrtle, Bay, and Box. Myrtle was also occasionally used for hedges at Chiswick. Round part of Sir Stephen Fox's garden were hedges of this shrub, which were protected in the winter by boards. Some of the evergreens were sold at moderate prices; a nurseryman named Pearson had in 1691 abundance of Cypressess, 3 feet high, at 4d. Verspriet, a Dutchman probably, is noted by Gibson as having specimens of the *Lentiscus*, for two of which he got £40 from Sir Henry Capel of Kew. At Hoxton, then famous for its gardens, Darby had begun to obtain varieties of the Holly, and he kept specimens in books of the deciduous plants he grew. Fairchild, of the same place, introduced the Aconite and Hellebore; he studied botany, which few gardeners then did, and read a paper before the Royal Society upon the motion of sap. He was also author of the "City Gardener," published in his later years (1722), and the founder of an annual botanical sermon. His Vineyard is referred to, about 1700, as being remarkable for the Grapes it

yielded; and another famous vineyard was at Mile End, to the east of London, where Clements was very successful then with the Frontignac and White Muscadine.—J. R. S. C.



EVENTS OF THE WEEK.—To-day (Thursday) the National Chrysanthemum Society's Provincial Show at Hull, in conjunction with the local Society, will be opened in the Artillery Barracks, and a Conference will be held in the evening, at which Mr. E. C. Jukes is expected to preside. The Show will close on Friday evening. Upon the same day the International Chrysanthemum Centenary Exhibition will be opened at Edinburgh and continues until Saturday. Chorley and Stockport Shows are announced for November 22nd, and the Ghent Centenary Celebration will be opened on November 24th.

— **BIRMINGHAM SHOW.**—Our reporter telegraphs: This year's Exhibition is unquestionably the best ever held by the Society. In the chief class for cut blooms (forty-eight) the first prize of £25 is won by J. Corbett, Esq., M.P., Impney Hall, Droitwich (gardener, Mr. Parker), after a very close struggle with W. Marshall, Esq., Taunton, both having remarkably fine blooms. The latter received the second prize of £15, the third going to Colonel Wingfield (gardener, Mr. Lambert), the fourth to Sir G. Moss, the fifth to Sir R. Moon, and the sixth to Lord Heytesbury (gardener, Mr. Horsefield). Specimen plants were well shown by Mr. Cooper, gardener to the Right Hon. J. Chamberlain, Highbury, Birmingham, Sir J. Martineau being second, and F. Denning, Esq., third. Three splendid groups were arranged, the first prize one, exhibited by Mr. Cooper, being particularly fine. In the chief class for Grapes (six bunches) the Earl of Harrington was placed first, J. F. Campbell, Esq., Utttoxeter, second, and the Earl of Cork, Marston House, Frome (gardener, Mr. Iggulden), third. A report will appear.

— At the Winchester Show, on Tuesday, which was not large but very good, Mr. F. W. Flight won the Ladies' Challenge Cup for the year with forty-eight beautifully fresh and well finished blooms. He was also awarded the N.C.S. certificate for the best bloom in the Show—a magnificent example of *Etoile de Lyon*, a similar award of merit being granted to Messrs. W. & G. Drover for one of the finest stands of *Anemone* flowered ever seen. A first-class certificate was granted by the Judges (Messrs. W. Holmes and J. Wright) for a new *Anemone Pompon*, which was named *Bessie Flight*, a deep rose-coloured sport from Madame Montels, secured by the father of the lady whose name it bears. Further notes on the Show must be deferred.

— **LIVERPOOL SHOW.** which opened on Tuesday, the 19th inst., was a great success. Cut blooms, especially Japanese, were excellent, and in the chief class the first prize was won by Mr. R. Foster, gardener to S. H. Thompson, Esq. Specimen plants and groups were also good; but in the fruit classes there was some falling off. A report will appear.

— **GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.**—Mr. Franc Gibb Dougall informs us that the Directors have decided that the spring show of the Glasgow and West of Scotland Horticultural Society will be held in the City Hall, Candleriggs, Glasgow, on Wednesday, 26th March, 1890. The autumn show will be held in the same place on Wednesday and Thursday, September 3rd and 4th, 1890.

— **THE PORTSMOUTH SHOW** appears to have been a great success. Upwards of 21,600 persons paid for admission, and 5000 children were admitted free.

— **NATIONAL ROSE SOCIETY.**—The arrangements to be submitted to the general meeting on December 4th are that the Metropolitan Exhibition be held at the Crystal Palace on Saturday, July 5th, 1890; and the provincial Show at Birmingham on Thursday, July 17th. To this latter Show silver cups, of the value of ten guineas each, have been presented by the Right Hon. Lord Calthorpe, the Right Hon. Joseph

Chamberlain, M.P., and A. H. Griffiths, Esq. The annual meeting will be held at the rooms of the Horticultural Club on Wednesday, December 4th, at 3.30 P.M., and the annual dinner at the same place at 6 P.M. The chair will be taken by the Very Rev. the Dean of Rochester, President of the Society.

— **PRESENTATION TO MR. ERNEST BENARY.**—On the 10th inst. this well known German seed merchant completed the 70th year of his age and the 50th year of his connection with the business carried on at Erfurt. His two sons made their father a present of an album containing the portraits of many of those in the United Kingdom who had done business with him for years past. Some of the leading seed firms in this country took advantage of the occasion to present Mr. Ernest Benary with a congratulatory address, which was signed by the representatives of twenty-one houses of business. The address was encircled by a very richly illuminated gold border, relieved with scrolls in beautifully toned and harmonised tints of red and blue. The arms of England and Germany in oval shields surmounted the address, and to correspond with this at the bottom was an hour glass entwined in Ivy, typifying age encircled by friendship. At the sides were two pretty bordered panels, with the dates Nov. 10, 1819, and Nov. 10, 1889. The designing throughout was most artistic.

— **TRITOMA UVARIA.**—It is not surprising that this should be commonly called the Flame Flower, as throughout September and part of October its tall handsome spikes have a grand illuminating effect in their dazzling brightness. Isolated plants are not so attractive as groups or rows, and it is in either of these forms that it is most telling. It grows best in rather a heavy rich soil, and is always finest when allowed to remain in the same place undisturbed for many years.

— **LILIUM LEITCHLINI.**—Having a number of this with other species, twelve months ago the bulbs were started in a cold pit, and in May transplanted into the open ground. They did very well indeed, and the bulbs are perfectly healthy and appear as likely to succeed in the open as many other *Liliums*. To those who do not know it, it may well be recommended, being sweet-scented, the flowers of good size, expanded, and of differing shades of spotted yellow. It is a charming companion to the various forms of *speciosum* which flower at the same time.—N.

— **THE members of the READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION** met at the "British Workman" last week to hear a lecture from Mr. B. J. Austin, entitled "Plant-Green." There was as usual a large attendance. Mr. Wm. Lees presided. Some good specimens of *Cyclamen*, profusely flowered, were exhibited by Mr. T. Smith. A fine basket of Raspberries came from Mr. Carter, the variety being *Hornet*, and a good sample of Peas, Sutton's Latest of All, gathered from the open ground. Mr. Austin's lecture, which was illustrated with diagrams, was exceedingly interesting and instructive. The Chairman hoped the lecture would be one of a series from Mr. Austin. On the motion of Mr. Jas. Martin, seconded by Mr. Baskett, a hearty vote of thanks was accorded Mr. Austin for his able lecture.

— **A FINE CAMELLIA.**—"On-looker's" note, referring to the fine plant, or rather tree, at The Henburs (see page 382) reminds me of a very fine tree I have seen in the handsome conservatory in the gardens at Balrath House, Kells, Co. Meath. It is four years since I saw it, but I should imagine it is as large as the specimen mentioned by "On-looker" by this time. If my memory serves me truly the tree at Balrath is about forty years old. Mr. Ramsay, who is now steward there, was about that time acting in the capacity of steward and gardener, and either purchased or grafted the plant about the year 1850. Perhaps Mr. Swift, the present head gardener, will kindly furnish the dimensions of the specimen, and correct me if I am in error as to its age, &c. The tree is planted out, and I believe the variety is *alba plena*.—HANDY ANDY.

— **SOUVENIR DE LA MALMAISON CARNATIONS.**—These have risen into very great popularity within the past two or three years. They are not, of course, any larger or more Clove scented than they were, but since it has been realised that a large flower may be employed for all sorts of decorative purposes—personal and otherwise—without one being considered a barbarian, these, the grandest of all Carnations, have taken their rightful place. I think the most beautiful of the trio under cultivation is the pink or rose variety. There are said to be two quite

distinct shades of this grown, one darker than the other, but I know cultivation has much to do in determining the particular degree of shade, light or dark, which this variety assumes, and if a very dark form is in existence it is strange it is kept so long out of the market. The Blush, or original "Malmaison," though not so telling, is also very fine. The third variety is that named Lady Middleton, which is the pink sort with blush stripes. This is considered rather tender and more difficult to grow than the others, but we have found it quite impossible to distinguish from the others when not in flower. These again run up to the same size, many of them 5 inches across. I have just reckoned the number of other varieties I have bought, and these amount to another five besides the above, but not one of them at all like the real "Simon Pure."—B.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, held at 25, Great George Street, Westminster, on Wednesday, the 20th inst., at 7 P.M., the following papers were read:—"Second Report of the Thunderstorm Committee—Distribution of Thunderstorms over England and Wales, 1871-1887," by William Marriott, F.R.Met.Soc.; "On the Change of Temperature which accompanies Thunderstorms in Southern England," by G. M. Whipple, B.Sc., F.R.Met.Soc.; "Note on the Appearance of St. Elmo's Fire at Walton-on-the-Naze, Sept. 3rd, 1889," by W. H. Dines, B.A., F.R.Met.Soc.; "Notes on Cirrus Formation," by H. Helm Clayton; "A Comparison between the Jordan and the Campbell-Stokes Sunshine Records," by F. C. Bayard, LL.M., F.R.Met.Soc.; "Sunshine," by A. B. MacDowall; "On Climatological Observations at Ballyboley, Co. Antrim," by Prof. S. A. Hill, B.Sc., F.R.Met.Soc.

— **MR. MALLENDER** sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR OCTOBER:—Mean temperature of month, 46.5°. Maximum on the 10th, 58.0°; minimum on the 15th, 29.2°; maximum in the sun on the 17th, 103.7°; minimum on the grass on the 15th, 25.1°. Mean temperature of the air at 9 A.M., 46.2°; mean temperature of the soil 1 foot deep, 48.9°. Nights below 32° in shade three, on grass fourteen. Total duration of sunshine in month forty-three hours, or 13 per cent. of possible duration. We had ten sunless days. Total rainfall 3.27 inches. Rain fell on twenty-three days. Average velocity of wind, 8.7 miles per hour; velocity exceeded 400 miles on three days, and fell short of 100 miles on nine days. Approximate averages for October:—Mean temperature, 48.2°; sunshine, eighty-four hours; rainfall, 2.84 inches. A very dull and damp month, rather cold, wet, and calm; constant showery weather, but without any heavy falls, very few frosts, but cold days.

— **LECTURE BY DR. SORBY.**—Under the auspices of the Sheffield Floral and Horticultural Society a lecture was delivered in the Committee room of the Montgomery Hall on November 6th by Dr. H. C. Sorby, LL.D., F.R.S., on "Weather Charts and Storm Warnings." Sir Henry Watson, President of the Society, occupied the chair, and said Dr. Sorby was so well known in scientific circles, not only in London but in the various towns in the north of Europe, that it was surely unnecessary to introduce him to the people of Sheffield. Dr. Sorby had been born in Sheffield, lived in it all his life, and was an honour to the town. They all knew how interesting he could make his lectures, and with what thoroughness he investigated the subjects he undertook to lecture upon. Knowing these facts he was sure no one would leave that room without adding to their store of learning. The lecturer had a very cordial reception, and commenced the lecture by giving an account of the constitution of the atmosphere surrounding the earth, and explaining the effect the sun had upon it, both by producing disturbance in the form of wind, and by bringing about the deposit of rain. He then fully described cyclones, and showed that the character of the weather in England depended upon the course of those cyclones. If they moved to the north of our country mild weather resulted, but if they moved towards the south the weather became cooler. Opposed to the action of these cyclones were the winds generally known as anti-cyclones, so-called because their peculiarities were opposite to those of cyclones. Cyclones often moved rapidly, but anti-cyclones moved slowly, and were accompanied by dry and calm weather. It was very difficult to foretell the weather in England, because almost all the atmospheric disturbances moved from the south-west to the north-east, and often advanced to the British Isles before there was time to detect their presence. If it were possible to have several stations out in the Atlantic Ocean the prediction of the weather would be much easier and more satisfactory, but with the knowledge they now had, and under the present conditions, it was possible to judge pretty

accurately what kind of weather was to be expected. The lecture was fully illustrated by means of charts, and drawings on the black board.

PLANTING FRUIT TREES—LIME.

LAST season on removing some Pear trees the effects of lime or mortar refuse came very favourably under my notice, and the present being an opportune time I give it for what it may be worth. Whatever may have been the object of the planter it certainly had the effect of thoroughly preventing the roots from penetrating the layer, which was about 6 inches thick, spread over a yard square, and at about 2 feet deep. The demolition of some old buildings caused the accumulation of a good quantity of the mortar refuse, and in the course of planting operations this was used rather freely in the sites prepared for the trees. Its effect was so marked that on a trench being dug round and the soil worked off with a fork to within reasonable distance of the stem, the tree could be easily overturned without the usual undermining; and the weight of the crop in one instance last year was such as to require support of the tree against the force of the wind; the tree, a pyramid, being about 8 feet high. Singular, too, was the fact that although the summer of last year was so wet the lime and soil immediately above it were dry to a degree that the spade could scarcely make an impression, and the grubber was found a very useful implement for hastening the work. From the fact of deep root action being prevented, the crops have been more regular than is the case when trees are necessarily subjected to root pruning, and the labour involved in making this provision would be well repaid, even if the required material had to be procured by purchase.—W. S., *Frome*.

VARIOUS NOTES.

EUCHARISES.

I THINK "M. D." is not very much out in considering the bad condition of so many *Eucharises* as the result of overwatering. I had some in a very bad state some two years ago, said to be the result of mite; but as the plants have done excellently since I restored them to health the same season, and I have further had an inkling that all might not have been right with regard to watering, I have begun to think that bad treatment has been at the bottom of the mischief, at least in our own case. The best *Eucharises* I ever saw are in gardens where perhaps one or two plants are cultivated in mixed collections of stove plants, and where the flowers are taken just as they come naturally.

LIFTING GLADIOLUS.

Mr. Murphy is right in lifting early ripened *Gladiolus* before they start making young roots. Last year and this I lifted much earlier than usual, the great bulk having been lifted in the second week of October, some earlier and a few later. None of the leaves was yellow, some being quite green. Instead of placing them under cover I have both seasons left the whole of them lying on the open ground, where the corms are exposed to all kinds of weather save frost. They do not die yellow so rapidly, as the cool damp nights preserve a good supply of moisture. Corms which have not finished actually increase in size just as spikes open when left on the ground at this season. The cormlets I leave on the old roots until spring; I think they are safer there. As to *Lemoine's* hybrids I also lift these, but some left in the ground by mistake last year came up all right this; but other varieties do the same. I think if these are to be well grown they also must be lifted and replanted every year.

For increasing stock Mr. Murphy ought to try cutting up the large corms. If carefully performed, and the corms well ripened, as many as three to five pieces can safely be secured. A medium-sized corm is much to be preferred to one of large size, as these do not, as a rule, produce a greater number of buds than two, while the former almost invariably may be cut into four.—B.

CATCHING AND KEEPING BULLFINCHES.

MR. M. DAVIDSON, on page 381, asks me to give particulars on this subject. To do justice to the matter would require considerable time and space as well as engravings. I have caught them in bat-fowling nets from thick hedges at night, with bird lime, and hundreds in trap cages. The latter mode I prefer. There is a great difference in trap cages, some of which the birds fear and will not enter, or very seldom. What I use I make to suit my fancy, and are the most practical I have met with, and here, I think, in a

great measure lies my success. I have still a better one "in my head," which I may carry out in the garden before long, when I have more leisure.

Mr. Davidson will probably get a trap cage at a bird dealer's without the expense of sending away; if not, he will find some advertised under "Appliances" in *Poultry*. I have not seen them, therefore cannot speak as to their adaptability. If not painted I would recommend at least two coats of green paint both to wires and woodwork for two reasons—protection, and to give as natural an appearance to the birds as possible. When thoroughly dry and the paint is hardened—this is important, as the birds are apt to peck it off or rub it off with their bills and get poisoned—put in your call-bird, which should, if possible, be one accustomed to captivity. I use one caught two years ago, because they become very docile and do not flutter like a new bird. The drinking tins are also painted green to take off the brightness so as not to frighten the wild ones. Hang the cage against a wall out of the reach of cats in a quiet place; my most successful spot is near an Apple tree, into which a wild bird readily comes at this season to the call of the decoy.

The trap part of the cage should be baited with Blackberries in bunches, and if a little Lettuce seed is sprinkled in so much the better. I carry a box of it in my pocket at this season. Having caught a bird it should be taken out as carefully as possible, as they are naturally terribly frightened. These birds should be first placed in a cage with wires on one side only, and they should be shallow, 6 or 8 inches deep; water may be placed in a shallow tin inside the cage at first, or many will die from not having the notion of getting at it if put outside. Feed on hemp and canary seed. If they take to this they are soon all right, but they must be watched, and if they do not place in some Blackberries or Privet berries, of which they are very fond, later in the season. In a day or two they will be reconciled, and may be taken out of the low cage and turned in a large stock cage or an aviary, always giving plenty of water for bathing and drinking. A handful of groundsel thrown in occasionally will be much appreciated, and of course they require rough grit. It is a very pretty sight to see a score or so, as I have at present, with their handsome red breasts.

There is always a demand for these birds for pets as cage birds, and they are readily disposed of to bird dealers in towns. Many a country cottager might pay his rent with a little insight into this matter, which I have repeatedly pointed out, and have given practical illustrations of how to carry it out at horticultural shows, besides freeing a neighbourhood of a universal pest in the spring at the fruit bloom.

I gave particulars as to the food of Bullfinches in a wild state for most of the year in the *Journal* some years ago. As there are many new readers perhaps it would be worth a reprint. Good bunches of Blackberries should now be procured and kept until food becomes scarce in the fields later on, for baiting trap cages, as a bird soon clears out all when shut in. If I have not made all plain I will give any further information. Up to the present I have taken twenty-two birds this autumn against twenty-three all last winter.—J. HAM.



THE WEATHER.

So far November has been singularly mild, and we have got half through without the thermometer once going below the freezing point—32° Fahr. Several nights I have gone out in my garden, where I have a hinged framework over my outdoor wall Chrysanthemums, at 10 P.M., and the thermometer stood at 55°. If this could always be guaranteed no one would house their plants. On the other hand the atmosphere has been saturated with moisture.

DAMPING OF BLOOMS.

This mild weather and atmospheric moisture naturally lead to damping of blooms, but it must be distinctly noted the damping is only noticed indoors, and is not so conspicuous there when there is a warm buoyant atmosphere, not much above or below 60°. At least that is my experience, as I keep a few dozen pots inside for experiment, the vast majority of my pot Chrysanthemums being in front of and forming a sloping bank with my wall plants.

As I have already intimated, if Chrysanthemums could be grown wholly in the open air there would be no damping. Then it follows the more nearly we can in Art approach the perfection of Nature the nearer we approach success. At the same time in manufacturing towns

thickly populated, it is no remedy to throw open the ventilators, and admit a moist, murky, and smoke and soot-laden atmosphere. In case of pot plants grown on the large bloom system, as distinguished from decorative or for cutting, the best precaution against damping is thorough ripening, and exposure of the plants in the summer and autumn. Excessive stimulants, especially sulphate of ammonia, lead to damping.

GOOD NEW VARIETIES.

I am going to the Waterford district exhibition, and shall learn further on this head; but here in this locality we have found Sunflower, Mrs. J. Wright, Avalanche, Edwin Molyneux, Mr. and Mrs. H. Cannell, Agnes Flight, Amy Furze, Theodore Bullier, and Florence Percy first-rate exhibition large flowers when taken on the crown bud. Terminal buds of the above and the following with me are almost useless:—Japanese: Mr. Garner, Mrs. F. Thompson, W. H. Burbidge, Mons. Bernard, Rose Beauty, Charlie Sharman, Gladiator, Yokohama Beauty, and Bomhardier. Anatole Cordonnier promises well, but curiously enough there is not a single good bloom of Belle Paule in any direction here. Lady Dorothy, James Weston, Goldfinder (late), and Ralph Brocklebank late but promising, Nelson and Sabine (large Anemones) are not large with me. On the whole the blooms are rather above the average in the general collections.—W. J. MURPHY, *Clonmel*.

MRS. MARSHAM AND ELAINE.

I CAN assure "Chrysanthemum" (page 387) that Mrs. Marsham and Elaine are synonymous. When the supposed improved Elaine Mrs. Marsham was first sent out, I procured a cutting at a good price. I thought if we had really an improvement on Elaine, as stated, that it would be an acquisition worth looking after. The cutting was rooted with other varieties and well cared for, as most new varieties are at first. When the flowering time arrived I could see that I had been duped. All there was to distinguish Mrs. Marsham from Elaine was the label in the pot. That is one of the many instances in which the National Society has been of great benefit.—A CHRYSANTHEMUM GROWER.

MRS. CARTER.

MESSRS. J. CARTER & Co. have had an interesting display of Chrysanthemums this season at their Perry Vale Nurseries, well representing all the best of the old and new varieties. Some of the novelties were exhibited at the Chiswick Conference on November 5th, amongst them being blooms of the variety Mrs. Carter, of which one is depicted in the woodcut (fig. 56). This is a pretty and graceful Japanese, with exceedingly fine threadlike florets of a soft clear straw colour. It will probably prove useful for cutting purposes, as light flowers like these are admirable for arranging in vases.

A BLOOM HOLDER

IN the illustration of a Chrysanthemum bloom holder, page 419 in last week's *Journal*, is shown a modified form of my holder for cut flowers (patented in 1884). I enclose a sample, the same as is used for Chrysanthemums; also a tube which is made rather deep so as to allow the blooms to be raised a good height above the board, without anything being seen except the stem. The coils at the top of the support can be raised or lowered to suit any bloom.—H. FOSTER, *Watchmaker, Ashford, Kent*.

[The sample sent is very similar to the one figured, except that there is a double coil at the base of the bent wire in the tube, and a horizontal ring to hold the stem near the mouth of the tube.]

CHRYSANTHEMUM SHOWS.

PEMBROKESHIRE.—NOVEMBER 12TH.

THE fourth annual Exhibition of this Society was held in the Market Hall, Pembroke, on the 12th inst., and proved in every way most satisfactory. Although a young Society, it has become firmly established, and the Show is one of the best held in South Wales. The majority of the exhibits would compare most favourably with those of larger provincial societies, and nowhere have we seen cottagers and amateurs show better produce, both in plants and cut flowers. The arrangement throughout was admirable, reflecting much credit on the courteous Hon. Sec., Mr. Treweeks, and those of the Committee working with him.

Plants.—For groups of the largest size arranged for effect, quality also to be considered, Mr. French, gardener to Colonel Saurin, Orielson, Pembroke, was a very easy first with dwarf plants, tastefully arranged, and carrying extra fine flowers. This group was one of the features of the Exhibition, and was much admired. Mr. Crichton, gardener to Colonel Lamhton, Brownslade, was second. Many good trained plants were staged. For three Japanese, Mr. Dumble, gardener to Sir Charles Philips, Picton Castle, Haverfordwest, was first, having freely flowered plants of Bouquet Fait, La Nympe, and Val d'Andorre. Second, Mr. French. Mr. Dumble was also first for three incurved or reflexed varieties; but for a single specimen Japanese, Mr. French was a good first with a superbly flowered plant of Avalanche, and this in addition was awarded the National Chrysanthemum Society's silver medal as the best plant in the Show. Amateurs exhibited strongly, six competitors staging good groups. Splendid plants and cut blooms were also good. For the former Mr. Croft was first, Mrs. Rowe being a good second.

Cut Blooms.—With thirty-six blooms, for which a special prize was given by Sir C. Phillips, Mr. Dumble was easily first, having decidedly the best flowers in the Show. They comprised (Japs) Baronne de

Prailly, Fair Maid of Guernsey, Madame C. Audiguier, E. Molyneux, Mr. H. Cannell, Lady Lawrence, Carew Underwood, Boule d'Or, Triomphe de la rue des Châlets, Stanstead White, Belle Paule, Meg Merrilies, Sunflower, Val d'Andorre, Ralph Brocklebank, and Elaine. Incurved: Golden Empress, Alfred Salter, Queen of England, Mrs. Heale, John Salter, Jeanne d'Arc, Empress Eugénie, Empress of India, Golden Empress (very fine, awarded a medal as the best bloom in the Show), Princess Teck, Prince Alfred, Novelty, Mr. Bunn, Princess of Wales, Lord Alcester, Barbara, and Refulgens. The same exhibitor was also first for twenty-four blooms; Mr. French being a close second; third, Mr. Crichton. The same exhibitors took the prizes for twelve blooms. Many other classes, too numerous to mention, were well filled. Among the successful competitors the following obtained several first prizes:—Mr. Stephens, Mrs. Rowe, Mr. Skyrme, Mr. Croft, and Miss Elsdon. Fruit and vegetables made in this section a good display, and collectively the Exhibition was a most successful one.

LEEDS.—NOVEMBER 12TH AND 13TH.

THIS Show, which was the finest ever seen in Leeds, was held in the Town Hall. For several years past the Chrysanthemum Show has been held under the auspices of the Leeds Horticultural Society, but had failed to meet with success, the deficit in the finances after last year's show being considerable. Under these circumstances the Committee met some ten weeks since and decided they could not again undertake the responsibility of forming a show. The members of the Leeds Paxton Society at once held a meeting, and in a most spirited manner decided upon taking up the matter. A guarantee fund was initiated and liberally responded to, upwards of thirty, we are told, of those present becoming guarantors of 1 guinea each. Dates were fixed upon, the Town Hall taken, and a vigorous canvas of the Leeds residents for subscriptions commenced, with the result that upwards of £120 was collected, thus insuring the success of the Show, financially speaking, before the doors were opened to the public. The Leeds Paxton Society consists of about eighty members—gentlemen's gardeners and amateurs—who meet fortnightly for the object of reading and discussing papers upon horticultural topics, and their above remarkable success in carrying out a first-class show upon so short a notice serves to prove what may be done by a body of earnest men who are united in effort. There was a large attendance of subscribers present at the opening ceremony, which was undertaken by the Mayor (Ald. Emsley), who was accompanied by the Mayoress, and assisted by the ex-Mayor (Ald. Ward), Sir Edwin Grant, Sir George Morrison, Ald. Boothroyd, and other gentlemen.

The general appearance of the Show on entering the hall was very fine. Immediately facing the visitor were long rows of cross tables containing the numerous entries in the open classes for cut blooms, whilst down the centre, and also at the two sides, was a fine display of groups arranged for effect and of specimen plants. Facing the large orchestra was a row of tables filled with a fine display of fruit, whilst the orchestra itself was furnished with a competitive display of large specimen foliage plants and Ferns.

In the open class for thirty-six cut blooms, eighteen each incurved and Japanese, thirteen competitors staged flowers, the general quality of which was very high. The first prize was secured by Mr. P. B. air, Trent-ham Hall Gardens, Staffs, with a very superior collection, the incurved flowers being large and finely finished, whilst the Japanese also were very large and brightly coloured. The flowers shown in these stands were:—Incurved, back row: Lord Alcester, Alfred Salter, Empress of India, Bronze Queen (very fine), Golden Empress, and Empress of India. Middle row: Violet Tomlin (extra good), Emily Dale, Golden Empress, Mrs. Heale, Lord Wolseley, and Queen of England. Front row: Miss Haggas, H. Shocsmith, Beverley, Mr. Brunlees, Princess of Wales, and Jardin des Plantes. In Japanese the varieties were:—Back row: Stanstead White (fine), Edwin Molyneux, Etoile de Lyon, Meg Merrilies, Boule d'Or, and Stanstead White. Second row: Madame C. Audiguier, Avalanche, Criterion, Belle Paule (good), Fair Maid of Guernsey, and Val d'Andorre. Front row: Sunflower, Sarah Owen, Fimbriatum, Jeanne Délaux, Ralph Brocklebank, and Avalanche. Closely following the first prize collection were very nearly equally meritorious stands from four or five competitors, and considerable time was taken by the Judges in deciding as to the second and third, those shown by Mr. Leadbetter, gardener to J. Wilson, Esq., Tranby Croft, Hull, ultimately securing second place; whilst Mr. W. Midgley, Banorfield, Bingley, Yorks, was placed third.

In the open class for twelve incurved blooms Mr. Midgley was first with—Back row: Empress of India, Lord Alcester, Golden Empress, and Queen of England. Second row: Empress Eugénie, Hero of Stoke Newington, Mrs. Heale, and Mr. Bunn. Front row: Lady Hardinge, John Salter, Mrs. Shipman, and White Formosa. The second prize went to Mr. T. Ketchell, gardener to H. Simpson, Esq., Ackworth; third, Mr. Wm. Boston, Bedale, Yorks. Twelve Japanese, distinct, open class, brought three competitors, Mr. W. Pearson, Knottingley Hall Gardens, being first; Mr. Midgley second, and Mr. Boston third. The flowers on Mr. Pearson's stand were—Back row: Boule d'Or, Stanstead White, Madame J. Laing, and Gloriosum. Second row: Val d'Andorre, Comte de Germiny, Edouard Audiguier, and Fair Maid of Guernsey. Front row: Elaine, Marguerite Marrouch, Mdle. Lacroix, and Martha Harding.

Class N (open) for twelve Chrysanthemums, three incurved, three Japanese, three reflexed, and three large flowering Anemones, was a very

good one, and brought four competitors. The first prize was taken with a very bright and good stand by Mt. W. Grix, gardener to Sir Jas. Kitson, Bart., Gledhow Hall, Leeds.

Miscellaneous flowers, Camellias, bouquets, sprays, and coat-flowers were all well shown and filled a large table amongst the open classes. Fruits also, especially Grapes, were of a high order of merit and well shown. Mr. Midgley obtained first prize in each case for two bunches of black and two bunches of white Grapes. Some very tasteful and pleasing groups of mixed Chrysanthemums and foliage plants occupied the centre of the hall, the first prize being taken by Mr. Frankland, gardener to J. Barron, Esq., M.P., Chapel Allerton Hall; second, Mr. Townsend; third, Mr. W. J. Dixon. Groups of Chrysanthemums were also well shown by Mr. Boston, Bedale; Mr. Moore, Allerton Hall Gardens; and Mr. Eastwood, gardener to Mrs. Tetley, Westwood, Leeds, the first, second, and third being awarded in the order given.

The exhibits not for competition were numerous and good. Messrs.



FIG. 56.—CHRYSANTHEMUM MRS. CARTER.

Clibran, Altrincham, had a large stand of sixty blooms. Mr. T. B. Morton, Mowden Bridge Nursery, Darlington, had a large stand of fine blooms, mostly new Japanese. Messrs. Dickson, Brown & Tait of Manchester showed an exceedingly fine bank of well-grown Cyclamens. Mr. J. Carter, nurseryman, Keighley, had a fine stand of cut blooms of Primulas, double and single.

A word of commendation should be given to the officials and the hard-working Committee who so successfully carried this fine Show to a termination, and especial mention is due of the efficient work done by Mr. William Grix, Chairman of Committee, and Mr. Thos. Bonsal, Elmet Hall Gardens, Leeds, the courteous Secretary.

WELLS.—NOVEMBER 12TH AND 13TH.

Few societies have made better progress that has been observed at Wells. The Exhibition is not a very extensive display. There is not room for it in fact, but in every department the competition was close

and good, many of the exhibits being capable of winning prizes at more pretentious shows. Mr. A. G. Andrews is the Hon. Secretary, and this gentleman is always ably assisted by the Hon. Treasurer, Mr. Robert Isgar, and an efficient Committee, who strive to make the Show a success in every way. The Exhibition was exceedingly well supported, and the Society is in a very flourishing condition.

The great feature in these shows is always to be found in the groups, notably those to occupy a space 8 feet by 4 feet, and to consist largely of Chrysanthemums. There were fewer of these than usual, but those in competition were remarkably good. Mr. J. B. Payne, gardener to the Lord Bishop of Bath and Wells, was rightly awarded the first prize, his well arranged group comprising grandly flowered Golden Dragon, Mrs. Wheeler, Fimbriatum, Avalanche, Princess of Wales, and other Chrysanthemums, and very fine Poinsettias, Epiphyllums, Azaleas, Eucharises, and other flowering plants, as well as Palms and Ferns. Mr. J. Wilkinson, gardener to C. C. Tudway, Esq., was a close second, his Chrysanthemums being very good, while Mr. G. Stokes, gardener to Mrs. Gandel, was third. Creditable groups were also arranged by amateurs. Mr. W. Potter, gardener to A. Colson, Esq., Glastonbury, was the principal exhibitor of trained plants, being first for six incurved and also for six Japanese varieties. Mr. Chislett, gardener to Mrs. Rees Mogg, Glastonbury, was also a successful exhibitor of trained plants, another prizewinner being found in Mr. E. Stokes. Mr. Young, gardener to W. S. Hodgkinson, Esq., was awarded two first prizes for fine foliage plants, Messrs. Wilkinson and J. B. Payne also being successful in the same classes. A fine lot of Primulas were shown, both single and double flowering being unusually good. Mr. Payne was first for doubles and second for singles, and Mr. Wilkinson first for singles and second for doubles.

There were scarcely so many cut blooms as last year, and on all sides complaints were heard of the best being over. In the principal class, that for twelve incurved and twelve Japanese varieties, Mr. Wilkinson took the lead, his incurved being especially good. They consisted of Alfred Salter, Empress of India, Golden Empress, Queen of England, Jeanne d'Arc, Violet Tomlin, and Miss M. A. Haggas (both very good), Princess Beatrice, Cherub, Mrs. Heale, Empress Eugénie, and Golden Queen of England. The Japanese were also highly creditable, the varieties being Boule d'Or, Pelican, Baronne de Prailly, Ralph Brocklebank, Meg Merrilies, Mrs. Cannell, Belle Paule, J. Délaux, Avalanche, E. Molyneux, and Triomphe de la rue des Châlets. Mr. J. B. Payne was a very good second, his Japanese varieties being decidedly the best. Among these were very fine blooms of Ralph Brocklebank, Avalanche, Condor, Sunflower, Mrs. J. Wright, and Golden Dragon. The third prize went to Mr. W. A. McKenzie, gardener to A. S. Somerville, Esq., who also exhibited creditably. Mr. Wilkinson was well first, Mr. Payne second, and Mr. McKenzie third for twelve incurved varieties, an extra prize being awarded to Mr. R. P. Phillips, gardener to John Bailly, Esq., Frome.

The best twelve Japanese varieties were staged by Mr. J. B. Payne, whose stand contained very fine blooms of Avalanche, Golden Dragon, Ralph Brocklebank, and Sunflower. Mr. Wilkinson was a good second, and Mr. E. Stokes third. Mr. Wilkinson was also first with Anemone-flowered varieties, and Mr. Payne a close second. The best represented varieties were Fabian de Médiana, Sœur Dorothee Souille, Lady Margaret, Madame Berthe Pigny, Minnie Chate, Cincinnati, and Duchess of Edinburgh. Mr. Payne was first, and Mr. McKenzie second for Pompons. The principal prizewinners for vases of Chrysanthemums were Mrs. Tudway and Miss Tyte, and the ladies also made a most effective display with vases and baskets of autumn foliage, fruit, and Grasses. A bouquet composed entirely of Marie Louise Violets and greenery was very beautiful. It was shown, not for competition, by Messrs. Mogford & Son.

A tempting display of fruit was arranged, though the Grapes were scarcely so good as usual. With any black variety of the latter Mr. Wilkinson was first, Mr. R. P. Phillips second, and Mr. Payne third, all showing Alicante creditably. Mr. Wilkinson was also first with Muscat of Alexandria, Mr. Payne being second, and Mr. Humphries third. Mr. Wilkinson had a grand dish of Doyenné du Comice Pear, and was first in the class for one dessert variety, Mr. J. Everett being second with very fine fruit of Beurré Diel. The most successful in the Apple classes were Messrs. Wilkinson, Payne, Phillips, and B. Taylor. Messrs. Brown staged a large and well grown collection of fruit, not for competition, these including Apples, Pears, Plums, Medlars, and Tomatoes.

BOURNEMOUTH.—NOVEMBER 13TH.

THE Bournemouth express from Waterloo Station is one of the famous trains in the south of England, and its destination is one of the most beautiful and salubrious seaside resorts in the kingdom. There is plenty of room to breathe at Bournemouth—ozone from the sea, and the health-giving aroma of the Pine woods from the land. Villas are attractive, hotels superior, roads and drives picturesque, while trees abound everywhere. No wonder at the increasing number of visitors, also of affluent residents, and no wonder, therefore, there should be a Chrysanthemum Show.

The Bournemouth and District Chrysanthemum Society was established three years ago, or at least the Exhibition to be noticed is the third of the series. It is under the immediate patronage of Her Royal Highness the Princess Christian, and the President is C. E. Baring Young, Esq., M.P., who opened the Show, and takes deep interest in the welfare of the Society. The Exhibition was in every respect markedly superior to that of last year, and was worthy of the great numbers of visitors

who attended, nearly £70 being taken the first day. The Committee and Secretaries, Messrs. C. Brown and J. Spong, worked assiduously in making everything agreeable and the Show a gratifying success.

In the open class a silver challenge cup, value £8 8s., and £3, was offered for thirty-six cut blooms, eighteen to be incurved and eighteen Japanese, not more than two of one variety. The cup was offered by the President, and the money by the Society, with £2 and £1 as second and third. Four stands were put up for competition, Messrs. W. & G. Drover being successful. Mr. G. Garner, gardener to Mrs. Braddyll, was second; and Mr. T. K. Ingram, nurseryman, third. Messrs. Drover's stand was very good indeed. The incurved were better than those in the second prize stand, and the Japanese in the second were better than those in the first, being fresher, larger blooms. The contest between the two was very close. The first prize stand contained splendid blooms of the following varieties, reading from the left hand:—Japanese—Back row: Etoile de Lyon, Boule d'Or, E. Molyneux, Gloriosum, Carew Underwood, M. J. M. Pigny. Middle row: Triomphe de la rue des Châlets, M. Bernard, M. J. M. Pigny, E. Molyneux, M. Bernard, Ralph Brocklebank. Front row: Madame Baco, Jeanne Délaux, Gloriosum, Jeanne Délaux, Mdlle. Lacroix, and Madame Baco. Incurved—Back row: Golden Queen of England, Lord Alcester, Lord Alcester, Empress of India, Golden Queen of England, Empress of India. Middle row: Lord Wolseley, Queen of England, Alfred Salter, Golden Empress, Queen of England, Golden Empress. Front row: Mrs. N. Davis, Hero of Stoke Newington, Princess of Teck, Charles Gibson, Mrs. N. Davis, and Princess of Teck. The best blooms in the second stand were Empress of India, Golden Empress, Queen of England, Alfred Salter, Empress Eugénie, Barbara, Boule d'Or, E. Molyneux, M. Bernard, Japonais, Criterion, and Jeanne Délaux.

In Class 3 (open) Messrs. W. & G. Drover were again first with the following twelve incurved:—Queen of England, Golden Queen of England, Lord Alcester, Empress of India, Lord Wolseley, Alfred Salter, C. Gibson, Golden Empress, Mrs. N. Davis, Barbara, Princess of Teck, and Nonpareil, Messrs. G. Garner and T. K. Ingram being second and third. In Class 2 (open), twelve Japanese, Mr. G. Garner was placed first with fresh brightly coloured examples of Meg Merrilies, Criterion, Avalanche, E. Molyneux, Comte de Germiny, M. J. M. Pigny, Mdlle. C. Audiguier, Fair Maid of Guernsey, Val d'Andorre, Madame Baco, Golden Dragon, and Jeanne Délaux. Messrs. W. & G. Drover and G. Read, Esq. (gardener, Mr. J. Chalk) were second and third respectively.

In the local class for twelve incurved, Messrs. T. K. Ingram, G. Garner, and S. Gould, gardener to Mrs. Dawson Damer, were first, second, and third in the order named; the same exhibitors winning in a little different order with twelve Japanese distinct. For six incurved, distinct, T. Head, gardener to General Stuart, was first, and for six distinct Japanese, F. J. Ellis, gardener to W. Henderson, Esq., was first. Reflexed and Anemone varieties were well represented.

Messrs. G. Watts & Son secured the silver cup, value £5, offered by the Society for the best group of plants, all Chrysanthemums, arranged in a space of 60 feet, quality and arrangement to be the leading features. The group well deserved the honour awarded to it. The colours were well blended, and the plants arranged without overcrowding. Altogether the group was a most meritorious one. Mr. T. K. Ingram was placed second, and Mr. H. J. Ellis and Mr. J. J. Swaffield equal thirds. Other good groups were well shown by G. Biles, J. James, gardener to W. Richardson, Esq., and J. Bush, gardener to Lady Wimborne. In the cut bloom classes, open to single-handed gardeners, Messrs. W. J. Ward, M. H. Dibben, and M. R. Legg were the most successful. Classes for table plants and Primulas were well filled. Mr. G. Garner had the best bouquet, Mr. J. Hobbs, gardener to H. Reeve, Esq., the best basket of Chrysanthemums, and Messrs. May & Co., florists, the best sprays and buttonholes. Messrs. G. Watts & Son and J. J. Swaffield had, not for competition, good groups of flowering and foliage plants. Mr. W. Parsons, gardener to Major-General Hutchinson, contributed a splendid group of Orchids in flower.

Fruit and vegetables were of good quality. For Grapes and collections of eight and six varieties of vegetables, Mr. G. Garner was first, W. Earp first for dessert Apples, and J. Menzies first for Pears. Some very good produce was staged by the cottagers; especially fine were the samples of Potatoes. This Society encourages gardening amongst the cottagers, and their exhibits show plainly that the Society is appreciated by them. Very fine weather prevailed, and visitors to the Show were numerous.

WESTON-SUPER-MARE.—NOVEMBER 13TH.

IN some respects the Show under notice was decidedly the best of the series held at Weston-super-Mare, and, what is also most satisfactory, was remarkably well supported, the Victoria Hall being inconveniently crowded at a comparatively early part of the day. Here we find a Committee largely composed of gardeners and gentlemen interested in the welfare of the town working well together, one section readily admitting that the other does excellent work. Messrs. W. H. Vanes and S. Lewis are the Honorary Secretaries, and two more obliging or efficient gentlemen could not well be found for the purpose.

It is in the plant classes where this Show more than holds its own with other rivals in the district, the competition in every case being most keen, while not a rubbishy exhibit was to be seen. The best six dwarf-trained plants of large-flowering varieties were staged by Mr. W. Brooks, among these being very good specimens of Mr. Glenney, Mrs. G. Rundle, and Guernsey Nugget. Mr. C. Holland, gardener to W. Ash, Esq., was a close second. For four varieties Mr. H. Lambert was first, having very freely flowered, not formally trained, plants of popular

sorts. Mr. W. Duffurn, gardener to Donald Cox, Esq., was a good second. Mr. C. Holland was well first with six Japanese varieties, having well trained, beautifully flowered specimens of Bertie Rendatler, Bouquet Fait, Margot, Fair Maid of Guernsey, Source d'Or, and Hiver Fleuri. Mr. W. Brooks was a close second. The best four Japanese varieties were shown by Mr. W. Duffurn, who has done well at a first attempt, while Mr. H. Lambert was second. Pompons were beautifully shown by several growers, the majority of the plants being well trained, and were furnished by good foliage and flowers. The best six specimens, consisting of Cedo Nulli, Marie Stuart, Mdle. Marthe, Atala, Boh, and Hélène were shown by Mr. C. Holland, Mr. Duffurn being a creditable second. Trained standard plants of any varieties were very superior, notably the specimens of Mrs. Forsyth, Christine, and Guernsey Nugget shown by Mr. Holland, and in this class Mr. Duffurn was again second. Mr. Holland was first for a single specimen of any variety, and most of the exhibitors named took prizes with pyramids of various varieties. Only three groups of Chrysanthemums were arranged, and the exhibitor of the freshest and best of these lost the first prize owing to the neglect to have all the so-called plants rooted—stems with flowers attached being stuck in the pots for the front row. The competition with mixed groups was much more satisfactory, four entering. Mr. W. Brooks was well first for a neat yet effective arrangement in which Ericas, Bouvardias, Solanums, and Orchids were freely used. Mr. Duffurn was a good second, and Mr. E. J. Day, gardener to W. E. Eveston, Esq., third. At the orchestra end of the principal hall there was a grand bank of Ferns and fine-foliaged plants contributed solely by Mr. Brook, who had two first prizes, and Mr. C. Holland, who was second in both instances.

Cut blooms were below the average, only one grower competing in the classes for twenty-four incurved and twenty-four Japanese varieties respectively, and in neither instance was a first prize awarded. This falling off was attributed to the earliness of the Chrysanthemum season, so many of the best blooms being lost. The competition was better in the other classes. With twelve large flowering varieties Mr. Tucker, gardener to Major W. P. Clarke, Trowbridge, was first, and Mr. Holland second, the first-named having the freshest blooms, but which call for no particular comment. Mr. Tucker was also first for twelve Japanese varieties, having fairly good blooms of Boule d'Or, M. J. Pigny, Mons. J. A. Laing, E. Molyneux, Madame C. Audiguier, Sarah Owen, Avalanche, M. Brunet, Madame Baco, Mdle. Laeroix, and Triomphe de la rue des Châlets. Mr. Duffurn was a good second, and Mr. Holland third, a lovely bloom of Grandiflorum in his stand being considered by the Judges the best example of a Japanese variety in the Show. Mr. W. Whitehouse, gardener to R. W. Gibbs, Esq., was first, and Mr. E. Wheeler, gardener to W. Charrington, Esq., second for six Japanese varieties, while the successful exhibitors of Anemone flowered were Mr. Tucker and Col. Mordaunt. Hand bouquets were very lovely, that which gained Mr. Brooks the first prize being only very slightly superior to the second prize bouquet staged by Mr. C. Winstone, Clifton.

Fruit was shown in moderate quantities only. Mr. Duffurn was well first for two good bunches of Alicante, and Mr. W. Hughes second with the same variety. White Grapes were poor. Mr. H. Marshall, gardener to R. Cox, Esq., was first for four varieties of Pears, and Mr. Duffurn second, the other most successful exhibitors of hardy fruit being Messrs. E. Wheeler, J. Thorne, W. Lewis, and T. Tilley.

NORTHAMPTON.—NOVEMBER 13TH AND 14TH.

THE Northampton Chrysanthemum Society scored another success at the Corn Exchange, Northampton, on the above date. Space will not permit us giving the details, but only a few of the leading features of this old established and excellently managed Society. The most striking feature in the Show was the admirable dwarf group from Mr. Underwood, gardener to J. A. S. Bouverie, Esq., Delapre Abbey, Northampton; this was arranged in a space 6 feet by 8 feet, about 6 feet high at the back, which contained fine plants of Madame C. Audiguier, sloping down to about 15 inches in front, that being the height of the plants of L'Adorable from the floor. The other varieties in the front were Triomphe du Nord, Val d'Andorre, Chevalier Damage, Florenee Percy, Avalanche, &c., the blooms being of extremely fine quality, and set on excellent dark green foliage furnished down to the pots. Queen of England, Empress of India, Empress Eugénie, and various other incurved varieties were used, the whole being grown on the cut down system. The specimen plants were arranged around the large hall with very great effect. The trained plants were very well done, although not so large as we sometimes see them, the flowers being elevated evenly above the body of the plant. The first prize collection of Mr. Rollings, gardener to the Rev. A. Longhurst, Abington, contained amongst others a fine plant of Guernsey Nugget. The huge bushes of the untrained specimens made a fine display. The first prize plants from Mr. Gwillam, gardener to Mrs. Shepherd, included a fine specimen of L'Adorable. The amateurs make a great feature at this Show, Mr. Hennings taking the lead with a very creditable group, Mr. G. H. Dunkley, Mr. Seaton, and Mr. W. Dunkley showing well in the other plant classes.

Cut Blooms.—The incurved blooms, like many others we have seen at exhibitions this season, were not quite up to the usual standard, many of them being slightly past their best, showing the season to have been very early this year. For eighteen incurved, distinct, Mr. Dunkley, gardener to Mr. S. Symington, Market Harborough, was first with a very good stand containing excellent blooms of Queen of England, Golden Empress, Princess of Wales, Novelty, Lord Wolsley, John Salter, &c. Mr. F. Perkins, Leamington, was a good second. Mr. Dunkley was also first for twelve incurved; Mr. Kightley, gardener to Sir Hereward Wake,

second. Mr. Dunkley was also to the front in the class for six incurved, distinct; and Mr. Kightley first for six of any one variety. In the principal class of eighteen distinct Japanese Mr. F. Perkins, Leamington, showed fine fresh blooms; second, Mr. Tipler, gardener to Mr. S. Gulliver, Aylesbury, with Mr. H. Dunkley third. In the class for twelve new Japanese introduced since 1885 Mr. Kightley was first, Mr. Tipler second, with Mr. Stevens third. One stand of good blooms contained what the Judges thought to be Comte de Germiny and Golden Dragon under new names, and was disqualified. Some very excellent blooms were shown in the amateurs' division, Mr. Stephens, Great Houghton, taking the lead with Mr. T. Mayes, and Mr. Hennings showing well. Tables decorated with Chrysanthemum blooms formed a very pleasing feature, and Primulas were also shown well. The classes for Grapes were well contested and the collections of vegetables very good, although limited in number. A very fair collection of Apples was sent by Messrs. Smith of Worcester, which was highly commended by the Judges, as was also a fine stand of Japanese and incurved Chrysanthemum blooms shown not for competition by Mr. Fyfe, gardener to Lord Wantage, Overstone, Condor and Avalanche being very fine. To Mr. Draper, the Secretary, and Committee much credit is due for the arrangement of the details of this well managed Society.

GRAVESEND AND MILTON.—NOVEMBER 13TH AND 14TH.

FOR several years this Association has been rather unfortunate in the weather when the exhibitions were taking place, of which this is the sixteenth. 1889 was a favourable exception, but now it has had the disadvantage of being no longer able to have its Show at the commodious Milton Hall. By favour of Mr. Wallis, the Association was able to make its display in two rooms at the Bat and Ball Tavern, Wrotham Road, which were fairly well filled with cut blooms and plants. Of cut blooms a much larger number were sent in than had ever been received before; but in plants there was a notable falling off. As is usual at these Shows there was a large exhibit of fruit and also of vegetables, the staging and other arrangements being skilfully carried out by the Secretary, Mr. Fairey. At 2 P.M. on Wednesday, the newly elected Mayor (J. H. Cooper, Esq.), entered the Exhibition, accompanied by the Mayoress and several members of the Town Council. Having been welcomed by Mr. Kitchingman, in the name of the Association, the Mayor declared the Exhibition open, and in his remarks he commented upon the increased popularity of the Chrysanthemum, and the benefits arising from the development of a love for flowers amongst all classes of the people.

The principal prizewinners were as follows:—Messrs. T. Richardson, gardener to Sir James Fergusson, Singlewell; J. Hollman, gardener to the Rev. W. L. Lewis, Meopham; A. Stevens, gardener to Mr. A. Tolhurst, Northfleet; J. Simon, gardener to Mr. Roberts, Greenhithe; R. Phillips, gardener to Dr. Baber, Meopham; and T. Hosmer, gardener to Dr. Goldenberg, Meopham.

CROYDON.—NOVEMBER 13TH AND 14TH.

THE annual Exhibition of this Society was held in the Skating Rink on the above dates. The exhibits were excellent and the attendance very large. Sir Thomas Edridge, who opened the Show, gave an admirable speech, in which he made special mention of the cottagers' productions and the vegetables from the allotments, which were shown in fine condition. He also spoke highly of the work of the Committee and Secretary, and hoped liberal subscribers would support them and help to make Croydon one of the leading societies.

There were several interesting exhibits staged, not for competition, including a collection of Apples and Pears of sixty dishes from A. H. Smee, Esq., The Grange, Wallington, and a similar exhibit from Messrs. J. Cheal & Sons, Crawley. Messrs. Peed & Sons, Streatham, also sent about forty-five dishes. Messrs. J. Laing & Sons, Forest Hill, filled a recess with a charming group of miscellaneous plants. Mr. T. Butcher decorated the stage of the hall with good taste with plants from his nursery. Mr. G. H. Cooper, florist, Croydon, had nine trained Chrysanthemums all well flowered, and Mr. C. Gibson, Morden Park, had several stands of choice blooms. Classes were provided for groups of fifty Chrysanthemums, but there were only three entries. Mr. G. H. Cooper was the only exhibitor of six trained plants, and he was deservedly awarded first prize.

The prizes in the open class for twenty-four incurved cut blooms, and a corresponding one for Japanese, were strongly contested. In the former, Mr. E. Whittle, gardener to C. H. Goschen, Esq., The Ballards, Addiscombe, was first with good even blooms. Back row: Emily Dale, Jardin des Plantes, Alfred Salter, Golden Empress, Mrs. Cunningham, Queen of England, Lord Aleester, Lord Wolsley. Middle row: Princess Teck, Baron Beust, Jeanne d'Arc, Nil Desperandum, Violet Tomlin, Miss M. A. Haggas, John Salter, Lady Hardinge. Front row: Mrs. Heale, St. Patrick, Prince Alfred, Mrs. W. Shipman, White Venus, Princess Beatrice, Mrs. Norman Davis, and Barbara. Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall, was second with smaller but very compact blooms.

Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley Cottage, Croydon, was first for Japanese with a magnificent stand. The large blooms in the back row were Etoile de Lyon, Avalanche, Madame C. Audiguier, Val d'Andorre, Meg Merrilies, Boule d'Or, Madame Baco, and Condor. Middle row: M. H. Elliott, Sunflower, Jeanne Délaux, Criterion, Mdle. Laeroix, Mr. H. Cannell, Stanstead Surprise, and Mrs. J. Wright. Front row: Thunberg, Thomas Stephenson, Mons. Bernard,

Japonais, Album Fimbriatum, Gloriosum, Triomphe de la rue des Châlets, Mrs. Wheeler. Mr. E. Whittle was a good second. Mr. Alderman was third with a creditable stand. In the local classes Mr. Shoemith secured the chief award for twenty-four incurved, and repeated his success for a like number of Japanese. Mr. C. Ritchings, gardener to W. Lindsay, Esq., Brandries, Beddington, had the best twelve incurved, distinct, staging Empress of India, Golden Empress, Jeanne d'Arc, Hero of Stoke Newington, Lord Alcester, Golden Queen, Queen of England, Alfred Salter, Barbara, Princess of Wales, and Cherub. The same exhibitor was also first for twelve Japanese, and in the class for twelve large flowering varieties with foliage. The best six incurved distinct, and a similar number of one variety, were staged by Mr. Whittle. In the latter Golden Empress was well shown. Boule d'Or was the best from Mr. Shoemith in a class for six Japanese of one variety. Mr. C. Evans, gardener to S. Underhill, Esq., was the most successful with the Anemones, staging good blooms. Fruit and vegetables were a great feature, the latter especially reflecting great credit on the numerous exhibitors.

FAVERSHAM.—NOVEMBER 13TH AND 14TH.

THE third Exhibition of this flourishing Society took place at the Institute Buildings on the above dates, when all available space for exhibits was occupied with plants, cut blooms, fruit, and vegetables, and all the available space for visitors was so full during the whole of the time the Show was open that the officers have every reason to be satisfied with the result of their efforts. The arrangements were in every way carefully carried out, and reflect great credit upon the Hon. Secretary (Mr. C. Stidolph), Mr. L. Jackson, and a band of colleagues too numerous to mention. Every opportunity is taken to make the Show popular. School children are admitted during the dinner hour for 1d., and on Thursday afternoon the inmates of the workhouse were admitted by invitation to a feast of flowers, and through the kindness of Mr. Stidolph they were supplied with something more substantial in the shape of buns and fruit.

The challenge cup for a group of Chrysanthemums brought out six exhibitors. Mr. Cornfoot, gardener to Mr. James Tassell, Faversham, succeeded in securing the premier position, Mr. Louth (the holder) being unsuccessful, the unfavourable mild weather having robbed him of his best blooms. Mr. Redcliff, gardener to Mr. W. E. Rigden, was second; and Mr. Greenslade third. In the open class for twenty-four cut blooms Messrs. Ray & Co. of Green Street staged some grand flowers, which included Stanstead Surprise, Pelican, Emily Dale, and Alfred Salter, and were awarded first prize; the second and third prizes were awarded to Mr. Goodhew, Sittingbourne, and Mr. G. Ray. Incurved blooms were of excellent quality, and for twelve dissimilar Mr. Taylor, gardener to Mr. R. I. Hilton, was first, Mr. Louth second, and Mr. Ratcliff third. For six incurved Mr. Akhurst, gardener to Mrs. Braham, Davington Priory, Faversham, was first; followed by Mr. Weller, gardener to Mr. J. A. Anderson; and Mr. Cornfoot, gardener to Mr. Jas. Tassell, Faversham. In the classes for Japanese the Judges must have had considerable difficulty in selecting the premier positions. For twelve distinct varieties Mr. Taylor was again first, closely followed by Mr. Louth and Mr. Akhurst. For six varieties the successful exhibitors were Mr. Cornfoot, Mr. Weller, and Mr. Rodgers.

The amateurs of this Society take a very conspicuous part, and occupy considerable space at the Exhibition with exhibits of plants, fruit, and flowers, that would, in most instances, do credit to the professional gardener; the premier Japanese bloom of Mr. L. Jackson was perfection. The list of amateur prizewinners is too long to set out, but some of the happy possessors of the principal prizes are Mr. C. Stidolph, the Hon. Sec., Mr. G. W. Wraight, Mr. Dan, Mr. W. T. Jackson, Mr. Goldfinch, and Mr. Burney. There were also a number of classes for cottagers, both for Chrysanthemums and vegetables, all of which were well filled.

The exhibits marked not for competition were a show in themselves. Fine Chrysanthemums were put up by Messrs. Ray & Co. of Green Street. Mr. Fred Hart, of Ospringe Nursery, Faversham, had a grand display of cut blooms, in which there were between fifty and sixty varieties, including many new ones. The attendance at the Show on both days was much in excess of last year, and notwithstanding that many valuable prizes were added to the schedule, the reserve fund will be considerably augmented by the 1889 Exhibition.

BATH.—NOVEMBER 13TH AND 14TH.

THE last of the series of five Shows held annually at Bath was an unqualified success. When comparing the Chrysanthemum Shows in this famous city with those held in other towns it ought always to be remembered that although Chrysanthemums are rightly the leading feature, every encouragement is also given to other plants, as well as fruit and vegetables in season—a really excellent all-round display being the result.

Chrysanthemum Plants.—The competition with trained plants generally is always close and good, no one exhibitor taking a decided lead. This season the premier prize for six large-flowering varieties was awarded to Mr. R. B. Cater, who had perfectly trained well-flowered specimens of Venus, Empress Eugénie, Bronze Jardin des Plantes, Prince Alfred, Mrs. Dixon, and a weak Empress of India. Dr. Budd (Mr. W. Davis, gardener) was a good second, his best being Dr. Sharpe, Mrs. Forsyth, and Lord Wolsley. In the next class, or that for four varieties, and from which the exhibitors in the foregoing were excluded, the first prize was well won by Mr. W. F. Brown (Mr. J. Southard, gardener),

who had very freely flowered specimens of Dr. Sharpe, Mrs. Rundle, Venus, and Empress of India. Mr. G. Lee (Mr. J. Edwards, gardener) was second. The best six specimens of Japanese varieties were shown by the Rev. E. Handley (Mr. S. Kerslake, gardener), who had splendidly flowered plants of Etoile du Midi, Bertier Rendantier, M. J. M. Pigny, Soleil Levant, and Madame de Sevin. Mr. R. B. Cater was second, noteworthy among his being finely flowered plants of Gloriosum and E. Molyneux.

Miscellaneous Plants.—There were a considerable number of well-grown, fine-foliaged, and flowering plants, a judicious use of large specimens of the former adding greatly to the general appearance. There were also several good groups arranged for effect, Messrs. G. Cooling & Sons retaining their old premier position with a bright and pretty bank, in which flowering plants largely predominated. Mr. W. C. Drummond was second, and Mr. T. J. Tate a close third. There was good competition in the class for six Orchids, the Rev. E. Handley taking the lead with plants in excellent condition. Mr. R. B. Cater was a good second, and Mr. J. T. Holmes (Mr. T. G. Horsell, gardener) was third. Bouvardias were poor, and Cyclamen fairly good. The best six table plants out of a strong competition were shown by Mr. C. W. Mackillop (Mr. A. Taylor, gardener), Mr. J. Ayres being second, and Mr. A. R. Baily (Mr. W. Strugnell, gardener) a close third.

Cut Blooms.—Several classes are provided for blooms, and although no tempting prizes are offered the competition was keen throughout. The first prize for twenty-four large flowering varieties was awarded to Lord Heytesbury (Mr. J. Horsefield, gardener), who had very creditable stands, the blooms being arranged as follows:—Back row: Queen of England, Princess of Wales, J. Salter, Empress of India, Golden Queen of India, Mrs. W. Shipman, and Lord Alcester. Middle row: Nonpareil, Cullingfordi, Beauty, Baron Beust, Barbara, Hero of Stoke Newington, Mr. Brunlees, and Mrs. Shipman. Front row: Cherub, Princess of Teck, Golden Eagle, C. Gibson, Venus, Mrs. Heale, Lady Hardinge, and Jeanne d'Arc. Mr. W. M. Baker (Mr. J. Aplin, gardener), Gloucester, was a good second. Lord Radnor (Mr. H. W. Ward, gardener), Longford Castle, was third with smaller but very neat blooms. In the class for twelve large flowered varieties, distinct, the first prize was well won by Mr. A. Cole (W. Carpenter, gardener), Clifton, his best being Queen of England, Bronze Queen of England, Empress of India, and Lord Alcester. Lord Heytesbury was second, and Sir Hussey Vivian (Mr. W. J. Ireland, gardener), Swansea, third. Mr. J. W. Gibson (Mr. J. Ayres, gardener), Clifton, was first for six varieties, Lord Justice Lopes (Mr. W. Robinson, gardener), Westbury, a good second, and Mr. A. R. Baily a close third.

Japanese varieties were well shown. The first prize for twenty-four varieties was awarded to Mr. W. M. Baker, who had fine even blooms. Back row: E. Molyneux, Boule d'Or, Comtesse de Beauregard, George Daniels, Yellow Dragon, W. G. Drover, Carew Underwood, and Mrs. Cannell. Middle row: Album Plenum, Amy Furze, Meg Merrilies, J. Laing, Japonais, Ralph Brocklebank, Avalanche, and Mrs. F. Jameson. Front row: Madame C. Audiguier, M. Boyer, Thunberg, Mr. W. A. Harris, Mr. H. Cannell, Comte de Germiny, Duchess of Albany, and M. Brunet. Sir Hussey Vivian was second, and Lord Radnor was a close third; and was also well first for twelve varieties.

Fruit.—A lengthened report of these classes cannot be given, though they merit more than a brief notice. With a collection of six varieties Mr. H. M. Tugwell (Mr. J. Ellicott, gardener) Bath, was first, having good Lady Downe's and Muscat of Alexandria Grapes, a Melon, Beurré Diel Pears, Cox's Orange Pippin Apples, and Currants. Second, the Duke of Beaufort (W. Nash, gardener), Badminton. Third, E. G. Peacock, Esq. (Mr. W. Fisher, gardener), Bath. The Duke of Beaufort took the lead with four bunches of Grapes in two varieties, having Alicante and Gros Colman in excellent condition. Mr. T. Jones, Coombe Down, was second, and Mr. T. Ravenhill third. Mrs. Gouldsmith (Mr. G. Pym, gardener), Trowbridge, was well first with Gros Colman, and the Duke of Beaufort second, the first named also leading in the any black class with compact, well finished Gros Colman, Mr. E. G. Peacock being second with good Alicante. Mr. G. Read (Mr. J. Chalk, gardener), Salisbury, had a first prize for remarkably well coloured Muscat of Alexandria, Lord Cowley (Mr. J. Gibson, gardener), Draycot Manor, being a good second with the same variety. Pears and Apples were extensively and well shown in the various classes provided for them, some of the principal prizewinners being Messrs. W. Bannister, Westbury-on-Trym; A. Miller, Rood Ashton, Trowbridge; W. J. Smith, E. Hall, E. Fisher, J. E. Ellicott, and W. Nash.

Non-Competitive Exhibits.—The premier position among these must be given to the excellent exhibit of beautifully flowered Cyclamens by Messrs. Sutton & Sons, Reading. From among these the Judges singled out Reading Gem, Giant White, Vulcan, and Butterfly for first class certificates, a certificate of merit being also rightly assigned the whole collection. A certificate of merit was also awarded to Mr. H. Gray, Bath, for a good collection of cut Roses.

TUNBRIDGE WELLS.—NOVEMBER 13TH AND 14TH.

SPLENDID weather favoured the opening day of the Society's Show, which was held in the large and spacious building of the Royal Sussex Assembly Rooms and Corn Exchange on the above dates. Previously the Show was held in the large Drill Hall. The effect this year was certainly marred by being held in two distinct rooms. Trained plants and cut blooms were displayed in one room, whilst groups, fruit and vegetables occupied the other.

Trained plants and groups were the principal features of the Show.

two silver cups being offered in the leading classes. In the first class for a group of eight plants, in pots not to exceed 12 inches in diameter, effect to be the leading feature, Mr. Smooker, gardener to Mrs. Hall, Brathay House, Broadwater Down, easily secured the cup with eight splendidly trained and well-flowered plants of Mrs. G. Rundle, Mr. G. Glenny, Madame C. Audiguier, Chevalier Domage, Prince Alfred, Antonelli, Cullingfordi, and Mrs. Halliburton. Second, Mr. R. Beilby, gardener to W. H. Tindall, Esq., Hollyshaw. Third, Mr. H. Holmwood, gardener to T. Grant, Esq., 3, Hungerford Park. The second class for a group shown in a space 12 feet by 6 feet brought four competitors, Mr. H. Scammell, gardener to C. Reily, Esq., Nevill Park, securing the second cup with an excellent group of dwarf, well-trained plants, carrying fine blooms. M. L. Dupond, gardener to J. Alchin, Esq., Rusthall, and Mr. H. Hemsley, gardener to S. R. Brewerton, Esq., Broadwater Down, were placed equal second.

For six dwarf-trained Mr. J. Smooker was again successful with grand specimens, closely followed by Mr. Beilby. There were two classes for single specimen Japanese, Mr. J. Smooker winning in one of the classes with a good plant of Dr. Sharp; Mr. Tickner, gardener to H. Hewetson, Esq., Broadwater Down, being first in the other class with a grand plant of Val d'Andorre, Messrs. Beilby and Hemsley following. Mr. Beilby was first for four dwarf-trained Pompons, and Mr. Smooker first for a specimen Pompon, Messrs. Beilby and Bachelor following. Mr. Beilby also secured the first place for six pyramids, closely followed by Mr. Tickner.

Cut Blooms.—Numerous classes were provided for these, but the prizes are not of sufficient value to induce exhibitors from a distance to compete. It would be far better for the Society to limit the number of classes, and offer a more substantial prize in the leading class, and thereby secure better competition. In the class for twenty-four incurved blooms, distinct, Mons. L. Dupond secured the first place with small but compact blooms of Cherub, Eve, Guernsey Nugget, Princess of Wales, Baron Beust, Golden Empress, Lord Wolsley, Empress of India—back row. Mrs. G. Rundle, Nil Desperandum, White Venus, Hero of Stoke Newington, Mrs. Heale, Empress Eugénie, Lord Alcester, Mr. Bunn—middle row. Barbara, Isabella Bott, Antonelli, Mr. G. Glenny, Pink Venus, Mrs. Halliburton, Golden George Glenny, and Lady Talford—front row. Second, Mr. E. F. Loof, gardener to G. H. Mason, Esq., Castleton. Mr. W. Avis, gardener to Hon. P. Petre, Faircrouch, Wadhurst, gained first honours for twelve incurved, closely followed by Mr. G. Hickmott, gardener to Mrs. Alnutt, Huntleys. Mr. Avis was also first for six incurved; second, Mr. S. Standen, gardener to E. Beans, Esq., Moatlands, Paddockwood; third, M. L. Dupond.

In the class for twenty-four Japanese the competition was much better. Mr. W. Avis was again first with Thunberg, Carew Underwood, Ralph Brocklebank, Mdle. Lacroix, Edwin Molyneux, Boule d'Or, Lady Lawrence, Comtesse de Beauregarde—back row. Duchess of Albany, Comte de Germiny, Fair Maid, Madame Baco, Mons. Paul Fabre, Val d'Andorre, Gloriosum, Avalanche—middle row. Golden Dragon, Florence Percy, Japonais, L'Adorable, Mrs. J. Wright, Madame Audiguier, Margaret Marrouch, and Mad. Paule Dutour front row. Second, M. L. Dupond. Third, Mr. E. Loof. For twelve Japanese Mr. G. Hickmott came first with good blooms, Mr. J. Standen second, and Mr. E. Loof third. We are compelled to omit reference to the remaining classes, though the fruit is said to have been remarkably fine, and Mr. Charlton contributed effectively to the Exhibition.

GUERNSEY.

THE annual Guernsey Chrysanthemum Show was held in the Market Hall on the 13th and 14th November, under the auspices of the Royal Agricultural and Horticultural Society. The Show was a great success, comprising 3000 cut blooms and stands of splendid plants, the flowers glowing with a brilliancy of colour always to be noticed in this "island of flowers." The chief prizewinners were Mr. Bonammy Dobree, jun., Messrs. Carey, the Misses Mansell, Mr. Carey de Jersey, &c. The size and quality of the blooms could not be surpassed. Lady Dorothy, L'Automne, Chas. Gibson in the incurved section; with Mr. H. Cannell, Mrs. Cannell, Condor, George Daniels, and others among the Japanese were well represented.

The agricultural department of vegetables, roots, cereals, and seeds reflected most creditably on the Guernsey farmers, and by their enormous size and good quality astonished the numerous visitors to the Show. Twelve heads of Mangold Wurtzel weighed 183 lbs., and other kinds were really splendid specimens of produce.

CHISWICK.—NOVEMBER 14TH.

THE annual Exhibition of this Society took place in the Vestry Hall, Chiswick, on 14th inst., and was in all respects a success. Groups of Chrysanthemums were numerous and good. The premier position was taken by Messrs. W. Fromow & Sons, Sutton Court Nurseries, with a capital group of plants. Second, Mr. G. Webb, gardener to J. R. Starling, Esq., The Chestnuts, Gunnersbury. Third, Mr. F. Mears, gardener to J. T. Thornycroft, Esq., Eyot Villa, Chiswick. Extra prize to Mr. C. Padley, gardener to R. L. Cash, Esq., Rupert House, Chiswick. Cut blooms were shown in fine form by Mr. E. Sanderson of "National" fame; Mr. C. J. Waite, Glenhurst Gardens, Esher; Mr. F. Davis, gardener to E. Tautz, Esq., Ealing; Mr. R. Wood, gardener to Mrs. Sanderson, Chiswick; and Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Ealing. A feature was added to the Exhibition by a beautiful display of single and Pompon Chrysanthemums from the Royal Horti-

cultural Society's Gardens. From the same quarter also came some good Grapes and a collection of Apples. Mr. May, gardener to the Marquis of Bute, Chiswick House, sent a beautiful non-competitive group of Chrysanthemums, and a charming miscellaneous group of plants (not for competition) was sent by Mr. Reynolds, gardener to the Messrs. de Rothschild, Gunnersbury Park. The cottagers made a good display both of Chrysanthemums (plants and cut flowers) and vegetables.

PUTNEY.—NOVEMBER 14TH AND 15TH.

THE Putney and Wandsworth annual Show of Chrysanthemums is invariably one of the most attractive in the neighbourhood of the metropolis, although not of large dimensions, and this year's was no exception to the rule. It was held at the Assembly Rooms in the High Street.

Incurved blooms in twenty-four varieties were best shown by Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, and who usually shows very strongly here. He had an admirable stand of flowers, remarkably fresh, of good size, and neatly finished. Among the best were Golden Empress, Hero of Stoke Newington, Violet Tomlin (a fine bloom), John Salter, and Lord Alcester, but several others were well represented. The second prize fell to Mr. Knowles, gardener to Mrs. Egerton, Solna, Putney, who also showed neat bright flowers. The position of these two exhibitors was reversed in the class for twelve. Mr. Knowles' blooms were more even and better finished, the best being an excellent Emily Dale, and good examples of John Salter, Empress of India, Alfred Salter, and Queen of England. In Mr. Sullivan's stand was found the premier incurved bloom in the Exhibition.—a medium-sized example of Golden Empress, with very broad florets. Mr. Bentley, gardener to Sir T. Gabriel, Bart., Edgcombe Hall, Wimbledon Park, was third. The latter won with six, showing well, Mr. Portbury, gardener to W. N. Troy, Esq., Ripon House, Putney Heath, being second.

Japanese were a large and attractive display. In the principal class, twenty-four blooms, Mr. Sullivan was well in advance of his opponents. He had a grand example of Boule d'Or, which was selected as the premier Japanese in the Exhibition, also good blooms of Gloriosum, Mdle. Lacroix, Etoile de Lyon, Lady T. Lawrence, Madame Baco, and Baronne de Prailly. Mr. Knowles followed with much smaller flowers. Mr. Hendon, gardener to D. B. Beresford, Esq., Castletower, Wimbledon Common, was third. There were several stands of twelve, a capital collection from Mr. Sullivan being placed at the head of the list; Baronne de Prailly, Boule d'Or, Etoile de Lyon, and Gloriosum were finely shown, and the others, though small, were extremely fresh. Medium sized, well-coloured blooms from Mr. Knowles were placed second, and Mr. Newell, gardener to Sir E. Saunders, Fairlawn, Wimbledon Common, received the remaining award. The latter did better with sixes, winning by a few points from Mr. J. Carter, gardener to Miss Parry, Heathside, Wimbledon Common, and Mr. J. Bentley. In other classes for Japanese and incurved Messrs. Dark, gardener to J. Hooker, Esq., Lomond House, Richmond Road, Putney; W. Page, gardener to H. Chester, Esq., Royston, Putney Hill; F. Munt, gardener to T. Norton, Esq., Dryburgh House, Putney; Bartley, gardener to Miss Tuppin, Upper Richmond Road, Putney; and E. Moe, Feldheim, Wimbledon Common, secured prizes. Dr. George Walker, 12, Lingfield Road, Wimbledon, showed best amongst the amateurs.

Reflexed were not very extensively exhibited, but Mr. Knowles won easily, Mr. Hendon being second. Mr. Bentley won with Pompons, a fresh neat stand, Messrs. Grounsell, gardener to J. Langton, Esq., Millbrook, Putney, and A. Methven, gardener to W. Keiller, Esq., Fernwood, Wimbledon Common, following. Mr. Sullivan had the best Anemone flowered, a very fine stand.

The groups were good and formed a capital feature. Mr. Springthorpe, gardener to R. Alexander, Esq., Gifford House, Roehampton, was the winner with a fine group, which was composed of healthy plants bearing fine blooms. Excellent, too, was the second prize group of Mr. Carter. Mr. Barter, gardener to A. Venables, Esq., Hollywood, Wimbledon Park, and Mr. Townsend, Providence Nursery, Putney, were third and fourth.

Specimen plants were finely shown by Mr. Bentley, who was first in nearly every class, Messrs. Grounsell, Knowles, and Lacey, Upper Richmond Road, Putney, securing the minor prizes. Amongst the amateurs J. Pepper, Esq., Eaton Lodge, St. John's Road, Putney; Miss Toppin, H. Richardson, Esq., Springfield Lodge, Upper Richmond Road, Putney; W. E. Oates, Esq., 263, Upper Richmond Road, Putney; and H. Trengrouse Esq., Danehurst, Upper Richmond Road, were accountable for most of the prizes. Wreaths of Chrysanthemums and Maidenhair were very beautiful, Mr. Portbury having the best.

Fruit and vegetables were excellent, but space cannot be found for details of the classes. Mr. Griffin, gardener to Miss Christy, Coombe Bank, Kingston-on-Thames, deserves mention, however, for some splendid Grapes. Stove, greenhouse, and table plants also added an attractive feature to the display.

TEDDINGTON.—NOVEMBER 14TH AND 15TH.

A BRIGHT and pretty Exhibition was provided in the Town Hall, Teddington, last week, and though the extremely unfavourable season had necessarily reduced the number of entries to some extent, yet there were amply sufficient to make a show thoroughly creditable to the district and satisfactory to the Committee. A comprehensive schedule was carefully prepared, prizes being offered for cut blooms, specimen

plants, groups, floral decorations, miscellaneous plants, fruit and vegetables, the spacious hall being well and effectively occupied. The Society has been in existence seven years and has done good work in the neighbourhood, an enthusiastic amateur horticulturist, the Treasurer, Mr. W. Furze, having been mainly instrumental in promoting its success, in which he has been assisted by Mr. Douët, Mr. Howard, and other members of the Committee. Substantial local support has been secured, in consequence of which, together with the receipts at the doors, the Society is in a satisfactory financial condition. A great attraction is afforded by the amateur musical entertainments arranged by Mrs. Furze, and this year they proved extremely good.

Cut blooms were fresher and more numerous than might have been expected in such a season as this, and in some of the classes the competition was extremely close. The chief interest centred in that for twenty-four blooms, twelve incurved and twelve Japanese, distinct, the first prize consisting of a handsome challenge cup and a money prize, the cup to be won twice, not necessarily consecutively. The first cup was finally won by Mr. W. Furze (gardener, Mr. E. Coombs). The present cup had been won twice by different exhibitors, and this year Lieut.-General Vials, C.B., Teddington (gardener, Mr. T. Higginson) succeeded in winning it for the second time, and it thus became his property. The blooms were fresh, bright, of good substance, being arranged as follows:—Incurved, back row: Queen of England, Golden Empress, Empress of India, and Lord Alcester. Middle row: Lord Wolseley, Princess of Wales, Prince Alfred, and Mrs. Heale. Front row: Jardin des Plantes, J. Salter, Lady Hardinge, and Mr. Brunlees. The Japanese were, in the back row: Avalanche, Boule d'Or, Madame J. Laing, and Ralph Brocklebank. Middle row: Madame C. Audiguier, Meg Merrilies, E. Molyneux, and Fair Maid of Guernsey. Front row: Marguerite Marrouch, Golden Dragon, Maiden's Blush, and Duchess of Albany. The second prize was secured by Mrs. Holberton, who had good even blooms, both of incurved and Japanese. Another capital class was that for twenty-four incurved, in which Mr. W. Furze took the lead with excellent blooms, arranged in this order:—Back row: Lord Alcester, Alfred Salter, Empress of India, Lord Wolseley, Empress of India, Prince Alfred, Jeanne d'Arc, and Emily Dale. Middle row: John Salter, Miss M. A. Haggas, Violet Tomlin Mrs. Heale, Mr. Brunlees, Princess of Wales, Lady Carey, and Mr. Bunn. Front row: Princess Teek, Mrs. Shipman, Baron Beust Mabel Ward, Princess Beatrice, Barbara, Perle Précieuse, and Lady Hardinge. The same exhibitor was also first with twenty-four Japanese, fine handsome blooms, representing the following varieties:—Back row: E. Molyneux, Etoile de Lyon, Madame C. Audiguier, Boule d'Or, Stanstead White, Japonais, Ralph Brocklebank, and Avalanche. Middle row: Belle Paule, Marsa, Sunflower, Mrs. J. Wright, Duchess of Albany, Comtesse de Beauregarde, Condor, and M. Elliott. Front row: Mrs. F. Jameson, Hogarth, Val d'Andorre, Yokohama Beauty, Mrs. H. Harris, Gloriosum, Hamlet, and G. Daniels. In other classes, notably with twelve incurved, twelve Japanese, twelve Anemones, six Japanese of one variety, six Japanese Anemones, and twelve large Anemones, Mr. Furze gained premier prizes. Two series of classes were provided, one being open to all members of the Society, the other restricted to the immediate neighbourhood. A few also were appropriated to amateurs who do not employ assistance in the garden more than three days a week. In all of these the exhibits were good, some of the chief exhibitors being C. Fletcher, Esq., The Shrublands; Mrs. Cowan, Park Lodge; W. Millwood, Esq., The Woodlands; Lieut.-Gen. Viall; T. P. Chappell, Esq., Weir Bank (gardener, Mr. Davies), who had capital blooms in several classes; E. H. Douët, Esq.; and Dr. Walker; with Messrs. W. Bates, Lambert, Piper, Clarke, Cave, Higginson, and Gregory. Groups and specimen plants were not very numerous, but of good quality.

An interesting and attractive portion of the Show was that devoted to floral decorations, chiefly stands of Chrysanthemums and buttonholes, and considerable taste was displayed in the arrangement of the competing contributions. The buttonholes were exceedingly good, and the six with which Miss Furze won the first prize we have never seen surpassed in the material employed and the tastefulness of the arrangement. A few flowers of Orchids were used with Neapolitan Violets, Adiantum gracillimum, and Asparagus plumosus, but they were combined with an artistic grace too rarely seen in such productions. Miss Howard, The Grove, Teddington, was an admirable second, Orchid flowers being similarly used with excellent effect; these two exhibits constituting studies from which the most experienced floral decorators might have learned something. Mrs. R. Gardiner was third with neat and pretty buttonholes. Miss Howard was accorded premier honours for an elegant silver stand, in which bronzy red and yellow Japanese Chrysanthemums, with Adiantum cuneatum fronds, were used with excellent effect, Miss C. Wragg following with an arrangement of pink and white Chrysanthemums, Asparagus plumosus, and other foliage. Two stands of autumn flowers, fruit, and foliage gained for Miss Montgomery and Miss Wragge equal first prizes for two very distinct styles, but equally meritorious—one notable for the lightness of the material and arrangement, the other, though a little heavier, displaying a charming combination of light and yellow Roses, dark foliage, with Crataegus fruits and Strawberries.

Fruit was well represented, Apples and Pears especially. Mr. Davies won the first prize for three dishes of fruit, excellent Grapes, Apples, and Pears, Mr. Bates following closely. Vegetables also were capitally displayed, the exhibits in the cottagers' classes numerous and good.

LEICESTER.—NOVEMBER 15TH.

THE Leicester and Midland Chrysanthemum Society took a distinct step in advance this year in providing open classes with substantial prizes, the first for forty-eight blooms in thirty-six varieties, half incurved and half Japanese, being £10. The Exhibition was held in the Temperance Hall, a capacious and handsome building with organ and orchestra, and was in every way a gratifying success. The Show was opened by the Mayor, and on the evening of the first day a high-class vocal and instrumental concert was held in the Hall, several accomplished performers appearing gratuitously on the occasion. A band of children, boys and girls, highly trained by Mr. J. Muston, was a delightful feature in the proceedings. But we must turn to the flowers. Prizes were not offered for plants, indeed there was no room for specimens, and the central portion of the Hall was sufficiently furnished by two bright groups of Chrysanthemums, Messrs. J. & H. Hickling, Loughborough, and Mr. Henry Jordan, Ayleston Park, receiving the prizes in the order named. It was essentially a show of cut blooms, and an excellent one, smoothness and general good quality prevailing throughout the classes, not excluding those devoted to amateurs, which were of a highly creditable character.

In the chief class of forty-eight blooms seven excellent collections were staged, the first position being won by Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury. His incurved flowers were not of the largest size, but smooth, firm, and of high quality. His back row contained Lord Alcester (2), Alfred Salter, a deep buff sport from Lord Alcester, Golden Empress (2), and Queen of England. Middle row: Princess of Wales, Jardin des Plantes, Princess of Teek, Mrs. Shipman, Jeanne d'Arc, Violet Tomlin, Lord Alcester (sport), and John Salter. Front row: Mr. Brunlees, Eve, Barbara, Lord Eversley, Mrs. N. Davis, Refulgens, Mabel Ward, and Miss M. A. Haggas. Japanese—Back row: Stanstead White, Thunberg, Madame C. Audiguier, Comte de Germigny, Madame J. Pigny, Boule d'Or, Baronne de Prailly, and Etoile de Lyon. Second row: Sarah Owen, W. G. Drover, J. Délaux, Meg Merrilies, Madame Laing, Carcw Underwood, Ralph Brocklebank, and Avalanche. Front row: Mons. Bernard (2), Condor, Sunflower, Belle Paule, E. Molyneux, Criterion, Madame Baco—a heavy fresh, fine lot of blooms. Mr. John Dilley, gardener to W. H. Hay, Esq., Great Bowdon Hall, won the second place. His Japanese were splendid, full, fresh, and even. The incurved were of medium size, several of them good, all well formed, but a few a little stale. Third honours fell to Mr. P. Blair, Trentham Gardens. Some of the incurved blooms were of large size, and his stand surpassed the corresponding one of Mr. Dilley, but the Trentham Japanese fell off considerably, notwithstanding a few splendid blooms in the stand. In the open class for twelve incurved blooms, distinct, Mr. Lambert won the foremost place, Mr. W. Bolton being second; the positions of these exhibitors being reversed in the Japanese class, both staging high-class blooms.

In the amateurs' class for twelve incurved blooms, Mr. F. H. Anthony, Leicester, won the chief position with very neat and good blooms of Hero of Stoke Newington, Empress of India, Miss M. A. Haggas, Jeanne d'Arc, Jardin des Plantes, Mr. C. Gibson (good), Lord Hardinge, Barbara, Baron Beust, Violet Tomlin, Mr. Brunlees, and Princess of Wales. Second, Mr. John Read, Ayleston Park; third, Mr. Charles Day. Mr. John Waite, Leicester, was first in the class for six blooms, winning the N.C.S. medal with an excellent stand of Lord Alcester, Alfred Salter, Jeanne d'Arc, Queen of England, Golden Empress, and Empress of India. Second, Mr. John Read, with extremely neat blooms; third, Mr. F. H. Anthony.

Bouquets were numerous and good, as also were baskets of Chrysanthemums and Ferns—an excellent class. Mr. Perkins, Coventry, was first with a bouquet; and Mr. Perkins, Leamington, with a basket.

Messrs. Richard Smith & Co., Worcester, exhibited a splendid collection of Apples, and Mr. Lambert secured the chief prizes for black and white Grapes.

The orchestra was attractively furnished by Mr. James Wright nurseryman, and the Show was well arranged by Mr. John Read, the Honorary Secretary, Mr. W. K. Woodcock, and other assistants.

An excellent luncheon was provided for the Committee, Judges, and friends, by Mr. A. Angus at the "Carlton," a high-class commercial hotel, of which the once Chiswick student and fruit foreman is the popular and successful proprietor. In the evening a crowded meeting of Chrysanthemum growers was held in one of the rooms of the Temperance Hall, Mr. J. Wright presiding. Mr. Woodcock read a paper on Chrysanthemums—historical and practical—an interesting discussion, ensuing, which may possibly be further alluded to when the great pressure on space is relieved.

CHESHUNT.—NOVEMBER 15TH AND 16TH.

COMPARATIVELY few Shows are held on Fridays during the Chrysanthemum period, but that was the day selected for the Cheshunt Exhibition, to which St. Mary's Hall was devoted, and notwithstanding the early season, the date did not prove so unfavourable as might have been expected. The entries were fairly numerous, and the quality of the blooms so nearly equal that in several cases their positions could only be determined by close and careful pointing. It was altogether an extremely satisfactory display, and Mr. R. Ewing, who really projected the Society six years since, and who has supported it most energetically ever since, deserves great credit for the result of his efforts. Dr. Evans and Mr. George Paul also take considerable interest in the Society, and have assisted greatly in furthering its advance.

Cut blooms constituted the chief feature of the Exhibition, and the

leading class was that for twenty-four blooms, twelve incurved and twelve Japanese, not more than two blooms of one variety. There were three entries, but the contest for the first prize was really confined to two of these, which were nearly equal in merit, the incurved in the one almost balancing the Japanese in the other. Ultimately, after most carefully estimating the merits of the individual blooms, the premier award was secured by R. Ewing, Esq. (gardener, Mr. Bettesworth), by three points. The Japanese were extremely handsome blooms of rich colours, comprising the following—Back row: Sunflower, Avalanche, Mrs. Wheeler, and Ralph Brocklebank; middle row: Mrs. Wheeler, Ralph Brocklebank, Mdle. Paule Dutour, and Sunflower; front row: Madame Baco, Mdle. Paule Dutour, Japonais, and Madame Baco. The incurved were not quite so large or substantial, but they were fresh—Back row: Golden Empress of India, Emily Dale, Queen of England, and Miss M. A. Haggas (very fine); middle row: Emily Dale, Mrs. Heale, Miss M. A. Haggas, and Empress of India; front row: Princess of Wales (2), and Mr. Brunlees (2), all four weak. Mr. Collins, Ponsbourne Park Gardens, was second with extremely fine incurved blooms, but rather weaker in the Japanese. With twelve Japanese and twelve incurved, however, the last named exhibitor secured the premier award, being followed by Messrs. C. Cox and J. Turk. For six Japanese Messrs. J. Gilbert and J. Turk won the prizes in the order named, and with large Anemones Mr. Gilbert also took the lead, and was followed by Mr. Collins, both showing extremely well. In several other classes for cut blooms the exhibits were also good.

For a group of Chrysanthemums Mr. Collins won the first prize, having dwarf plants bearing good blooms well arranged. Mr. G. T. Howard was second with tall plants, but effectively arranged. The best miscellaneous group was shown by Mr. J. Walter, gardener to S. Warren, Esq., Dendrobiums, Cypripediums, Poinsettias, Palms, and Ferns tastefully disposed, Mr. Bryant following with a bright but too crowded group, in which the colours were not well harmonised. Mr. Ewing had first prize for a group of Pompons in 60-size pots, the plants 6 to 12 inches high, and well flowered. They were very ornamental and useful little plants, being grown on from cuttings inserted three in each pot in early summer. The same exhibitor showed a non-competing collection of thirty-six Japanese blooms (highly commended), including handsome examples of Ralph Brocklebank, Meg Merrilies, Sarah Owen, Japonais, and Boule d'Or. Messrs. Bryant and Turk exhibited well grown plants of Chinese Primulas, taking the first and second prizes respectively. Messrs. G. Paul & Son, The Old Nurseries, Cheshunt, also contributed some handsome Primulas of the best strains, and a large graceful group of Bamboos.

WATERFORD.

THE Show here on Saturday was not large, except in fruit, vegetables, and farm produce; but in regard to Chrysanthemum cut blooms the exhibits were remarkably fine and staged in splendid condition. Two of our most successful exhibition growers entered the lists, and possibly had the effect of scaring away less noted growers. The schedule was not pretentious, and the first class (not noting specimens or plants in pots, which left plenty of room for improvement) was for twelve incurved, six distinct varieties; and first place went to Mr. John Crehan, head gardener to Mrs. Malcomson, Minella, Clonmel, who had immense blooms of Blush Queen, Golden Queen, Jeanne d'Arc, Lord Alcester, Empress of India, Alfred Salter, Golden Queen, Lord Wolseley, and Prince of Wales. The second prize, with nearly the same varieties, went deservedly, by merely a few points, to Raymond De La Poer, Esq., Kilkronagh, Waterford (head gardener, Mr. Crawford), who had remarkably fresh and neat, though something smaller blooms. With twelve Japanese, not less than six varieties, Mr. Crehan won by two points with Thunberg, Edwin Molyneux, Bronze Dragon, Avalanche, Criterion, Boule d'Or, and Dormillion staged in this order. Mr. Crawford was second. The Hon. Dudley Fortescue showed well in this class (gardener, Mr. J. A. Calthorpe). We understand Mr. De La Poer would have done better only his best flowers went to Dublin the previous day, where he had first prizes in all the classes he entered for. Japanese, reflexed, and Anemones.—Here he had first prize for reflexed, which were admirable; but having two splendid blooms of Amy Furze the Judges, going by the National Society's catalogue, considered these inadmissible in a reflexed class. The varieties were Cloth of Gold, Cullingfordi, Amy Furze, Christine, Cloth of Gold, Chevalier Domage, Pink Christine, White Christine, and Golden Christine. First prize for amateurs also went to Kileronagh, the following being well shown:—Fabian de Médiana, Lady Margaret, Madame Cabrol, Nelson (fine, new), Lady Margaret, Empress, Sabine (new), Fleur de Marie, J. Thorpe, junior (new), George Sand, and Grande Alvéole. C. Percival Botton, Esq., who was assisted by J. A. Power, Esq., was a most efficient and courteous Secretary, while the Judges were Mr. P. Atherne, head gardener to the Duke of Devonshire, Lismore Castle, and your correspondent—W. J. MURPHY, Clonmel.

TWICKENHAM.—NOVEMBER 19TH AND 20TH.

CONTRARY to all expectations this Show, notwithstanding the lateness of the date for the south, proved an excellent one—indeed, in some respects it was the best the Society has yet held. The Town Hall, devoted to the Show, was crowded with exhibits, both in the main hall and the galleries, bright colours effectively arranged and highly satisfactory quality in the majority of the classes being the distinguishing features. Much credit is due to the Hon. Secretary, Mr. J. J. Pugh, whose courteous manner secures many friends; and to Mr. W. Bates, whose practical experience is invaluable.

The groups of Chrysanthemums constituted a capital display, Mr. Parsons, gardener to T. Twining, Esq., winning first honours with an admirable arrangement, well finished off in front with healthy Maiden-hair Ferns. The Chrysanthemum blooms were large, the colours well proportioned, and the plants of moderate height. Mr. Rickwood, gardener to Lady Freake, was a close second, with fine quality blooms and well arranged colours, the plants a little tall in the front. Mr. J. Waldie, gardener to J. Bigwood, Esq., was third, also for very well grown plants, with fine blooms but rather tall. Mr. Brittain, gardener to W. Brigg, Esq., was fourth. Specimen plants were shown by Messrs. Salloos and Cave, who were first and second, the former with dwarf trained plants, the latter with pyramids.

Cut blooms were far better, both in numbers and quality, than might have been expected, though, of course, they showed some effects of the season. For twenty-four blooms, twelve Japanese and twelve incurved, W. Furze, Esq., Teddington (gardener, Mr. E. Coombs) was first with excellent even blooms, followed by Mr. Waite and Mr. Higginson, amongst five exhibitors. For twelve incurved, Mr. Furze was also the premier exhibitor, staging compact neat blooms, Mr. Higginson and E. H. Donët, Esq., being second and third. Mr. Furze continued his success by taking first prize for twelve Japanese, Messrs. Futeher and Higginson following, all showing well. For twelve Pompons Mr. Furze led with beautiful blooms, Mr. Donët following with good examples rather smaller. Mr. Furze also had the best twelve large Anemones, and the best six incurved of one variety (Barbara). Mr. C. Garrod won premier honours for six Japanese of one variety with Thunberg, very fresh and good, Mr. Futeher following with Ralph Brocklebank of excellent colour.

A beautiful feature was formed by the vases of flowers in competition. Miss Clarke was first with a most graceful stand, in which Marguerites, Pancratiums, white Azaleas, and Grasses were used with charming effect. Miss Müller was second with a small, neat, and unpretentious stand; Mrs. R. M. Gardner being third with a tall, graceful stand not quite finished in the centre. For a stand of autumn leaves, berries, and flowers, Miss Prior was first for an effective arrangement of Marguerites, Roses, and Grasses. Mr. Newman of Bromley had the best bouquet, an exceedingly tasteful production; and Miss Clarke the best basket of Chrysanthemums. Table plants were well represented by Messrs. C. Coombs, Waite, and Parsons, who took the prizes in that order in a strong class.

In the class for a collection of four dishes of fruit Mr. Davies, Weir Bank Gardens, Teddington, was a good first, showing an excellent Pine, good black Grapes, Beurré Diel Pears, and King of the Pippins Apples. Mr. T. Buckland was second and Mr. Wadham third. With Pears Messrs. Garrod, Waite, and Fitzwater were the prizewinners. For Apples Messrs. Waite, Garrod, and Rickwood secured the prizes in a good competition. Mr. Waite had the best black Grapes (Alicante), followed by Messrs. Rickwood and Woods, Mr. Mitchell having the finest white Grapes (Mu-cat of Alexandria). With vegetables Mr. C. J. Waite took the lead, closely followed by Messrs. Higginson and Garrod.

Amongst the non-competing exhibits the group of Orchids from H. Little, Esq., was most praiseworthy, Cypripedium Spicerianum being grandly shown. An excellent group of Orchids was also staged by Mr. W. Gordon, groups of Richardias and Chrysanthemums by Messrs. Hawkins & Bennett, a tasteful group by Mr. H. E. Fordham, fine collections of Cyclamens by Messrs. W. D. Clarke and J. Walker, grand Celery, Seakale, and Apples from Mr. Poupart, Gourds from Messrs. Wallace & Co., and fine Chrysanthemum blooms from Mr. W. Bates, Poulett Lodge Gardens.



HARDY FRUIT GARDEN.

LIFTING FRUIT TREES.—To be successful with cordon, bush, or other miniature trees they must be well attended to at the roots, otherwise the chances are there will be much wood growth formed, and but little fruit produced. Lifting the roots and improving the soil is also the best remedy for the other extreme—viz., abundance of bloom, followed it may be by comparatively worthless fruit, little or no wood growth being formed. What is wanted in all cases, or whether the trees are on free-growing or dwarfing stocks, is abundance of root fibres near the surface. Lifting, if properly done, is one of the best means of correcting downward root action, good surface culture, including mulchings of manure, or, better still, half-decayed leaves and manure from old hotbeds, will do the rest. If annual or biennial liftings, partial or complete, cannot be resorted to, the least that can be done in the case of all young trees is to lift and lightly root-prune during the second or third winter after planting. This may give a temporary check to the top growth, and which, in the case of wall trees with plenty of head room, may be thought undesirable, but it will most probably

obviate the necessity for more drastic measures later on. It is a case of prevention of deep root action, abundance of surface root fibres maintaining the trees in a productive state, whereas when they are furnished with deep running fibreless roots only, much wood growth and fitful crops of inferior fruit are the sure consequence.

THE PROCESS DESCRIBED.—In all cases where trees must be kept in a rather small compass, severe pruning being resorted to if necessary, it pays to lift the trees every season. This being an annual process, a thicket of roots are formed, and not the slightest ill effects to the crops result from the lifting, nor is it a great undertaking. A fairly wide, deep trench should be opened at about 4 feet from the stem of the trees, and from this the roots can be undermined, all but the deep running roots being preserved, and again relaid in a mixture of old soil and either fresh loam or half-decayed leaf soil. The fresh compost is taken possession of during the next growing season, and fruit of the best quality, frosts permitting, results. Pyramids do not receive the full benefit of the sunshine all round, and for this reason it is advisable to half-turn them round each time they are lifted, by which means they are maintained in a generally well-ripened productive state. Pyramid and espalier-trained Pears on the free-growing or Pear stock, and which it is desirable should increase considerably in size, must not be so severely handled, but if carefully undermined so as to cut through or bring up the deep running roots every third year, and the roots exposed relaid in fresh compost, the top growth would be both sturdy and fruitful, the quality of the fruit being greatly improved by this treatment. Apples, Cherries, and Plums pay for similar treatment at the roots, the longevity of the trees, as well as their productiveness, being fostered by good root culture.

APRICOTS.—There are numerous gardens in this country where Apricots cannot possibly be profitably grown, the reason for this being hard to determine, though probably one of the principal causes of failure is to be found in the nature of the subsoil. The complete removal of a cold clayey subsoil, and the substitution of good turfy loam, or this, the ordinary surface soil, leaf soil and charred rubbish in mixture will be attended with good results, though even this is of little avail if the site is not fairly warm, high, and dry. In many instances it is no easy matter to collect sufficient fresh compost to take the place of the subsoil, but the only alternative is to plant rather high or well above the ordinary garden level, root lifting being resorted to every autumn. In some districts, notably where at times the water cannot get away freely, and unfortunately there are numerous gardens thus badly located near streams, it is found necessary to ward off all late autumn and winter rains from the Apricot borders with the aid of shutters, more than sufficient moisture ascending from below.

PEACHES AND NECTARINES.—These, notably Peaches, might more often be successfully grown if more attention was paid to the roots. When originally planted in a wide rich border they grow much too strongly at the outset, the wood failing to ripen properly, and un-ripened wood in addition to being unfruitful is not of a suitable character to lay the foundation of serviceable trees. If a new site is selected for them use comparatively poor, yet fresh, loamy soil, taking care beforehand to well and deeply drain the border. In most instances, however, it is old sites that are prepared, and seeing that the soil must be exhausted, much of this should be taken away, and fresh turfy loam or the compost recommended for Apricots substituted. If the trees are planted firmly in this, care being taken to keep rather above the garden level and also not to bury the roots deeply, a good start will be made. Completely relifting may even then be necessary after the second or third season's growth in order to check grossness, and this operation ought to be repeated not less often than every second autumn, though some successful growers make it annual practice to lift all their Peach and Nectarine trees. The roots must be kept out of the subsoil, or the top growth will in most instances be unsatisfactory. Hundreds of both young and old trees that have never been lifted since they were planted in various parts of the country would be greatly improved in health and productiveness if lifted, and otherwise taken in hand at once. After all it is not such a very serious undertaking this undermining either large or small trees, while the results are usually extremely gratifying. The roots should be carefully searched out, lightly shortened and relaid in fresh compost much nearer the surface than heretofore.

FRUIT FORCING.

VINES.—*Houses Cleared of Grapes.*—Directly the Vines are leafless and the Grapes cut attend to the pruning. If the Vines are strong, having stout, short-jointed wood, they may safely be pruned to a couple of eyes. If, however, the base buds are small, and the Vines have not from similar buds in previous years given as large bunches as desired, the laterals may be left a little longer. It is necessary that a plump round (not flat) well developed bud on stout, hard, thoroughly ripened wood be selected for pruning to, striving for a close compact bunch of well-set berries with a stout footstalk in preference to a large uneven bunch, which usually follows large flat buds on long-jointed wood, the foliage supporting such being large, thin, and incapable of elaborating the food and concentrating it in the buds at their base. Avoid pointed buds, they are usually not productive of bunches, and if they are on long-jointed wood the bunches have a tendency to revert into tendrils. Wash the house thoroughly, and cleanse the glass. Remove only the loose bark; avoid the customary scraping. Tepid soapy water is unquestionably the best means of cleansing the Vines, using a brush with care and judgment, following with an approved insecticide. Remove the mulching or loose surface material down to the roots, and place on a

couple or 3 inches thickness of fresh loam, mixed with some old mortar rubbish passed through a three-quarter inch sieve, night soil, soot, and wood ashes. If the loam be light add some clay marl dried and reduced to powder. Of turfy loam cut 3 inches thick and chopped moderately small have twenty bushels, of sifted old mortar rubbish add two bushels, of night soil mixed with an equal proportion of dry earth one bushel, soot half a bushel, clay marl (if the loam be light) two bushels, and one bushel of steamed bone meal. Charcoal dust may be added to the extent of four bushels, together forming a compost, when thoroughly incorporated, good as a dressing for Vine borders, alike as a rooting and feeding area. The early watering will wash the assimilated matter down to the roots, and fresh feeders encouraged into it can be kept there by surface dressing or mulching with short manure after the Grapes are set, feeding with liquid manure as necessary. If the houses must be used for plants they should be kept cool, admitting air freely, not exceeding 40° to 45° by artificial means. It is best, however, to dispense with the plants, admitting air in all but severe weather, a few degrees of frost doing no harm to the Vines, but ensuring more complete rest.

Houses of Thin-skinned Grapes.—Although the somewhat heavy and continued falls of rain have saturated the soil and atmosphere yet Black Hamburgh Grapes have kept well, though in a saturated border it is liable to damp at the footstalks, and the berries to fall, particularly when the Grapes have been ripe for some considerable time. Madresfield Court keeps better than Black Hamburgh, not being so liable to suffer from damp, and the liability to crack is at an end as soon as the wood and foliage are thoroughly ripened. Indeed Madresfield Court keeps capably until the end of November, and equal to any thin-skinned variety until January. Black Hamburghs have kept colour better than usual, those ripened early in August being still good in colour, and particularly rich and sugary. The foliage is nearly all down, and after this is effected Hamburghs lose colour, and in a dry atmosphere shrivel rapidly. Similar remarks apply to Foster's Seedling and all the thin-skinned varieties. Vines, however, of these varieties that ripen their crops in September have the foliage still fresh, and will bear more moisture at the roots and in the atmosphere than those that have had the Grapes ripe since August. Indeed a moderate amount of air moisture is necessary to prevent undue evaporation and the shrinking of the Grapes, it not being so much air moisture as a stagnant atmosphere that is fatal to the keeping of Grapes. Slight warmth in the pipes will be required constantly to maintain an equable temperature, but this must not be high or it will cause the berries to shrivel prematurely, 50° not being exceeded by artificial means, ventilating freely and early in bright weather, so as to prevent moisture being condensed on the berries. The outside borders have been protected from rains by shutters or other material, and if inside borders too are covered with straw the Grapes will keep better. Covering the border prevents it cracking, and keeps down moisture likely to arise and prove injurious.

Earliest Forced Vines in Pots.—The earliest started will now be showing signs of growth, so that the temperature may be slightly increased—55° minimum and 66° maximum by fire heat, with 10° more from sun heat, proportionately increasing the atmospheric moisture. The ventilation will require to be moderate, and what is given should be at the top of the house. If side ventilation be employed the cold air must be made to pass the heating surface so as to become warmed, for cold currents of air are extremely pernicious.

CUCUMBERS.—Cold weather is very trying, as the continuous firing dries the atmosphere more than is good for the foliage, the fruits becoming stunted and swelling indifferently, and when the pipes are close to the roots the soil is dried too much for healthy growth. Be careful in ventilating, providing it, however, whenever a favourable opportunity offers, but not when the external air is sharp and cold. In bright but cold weather turn off the top heat when the sun is powerful and likely to raise the temperature above 80° in such weather, damping the house morning and afternoon, closing early. Care must be taken in damping so as not to wet the embryo fruits, or they will damp off. Water will be required at the roots about twice a week. A temperature of 60° to 65° at night, and 70° to 75° by day is suitable.

The early winter fruiters or plants from the August sowing, and planted out in September, have grown to the extent of the trellis or nearly so. Unless there is undue vigour in the plants they should not be allowed to fruit for a few weeks. Attend frequently to stopping, thinning, and tying the shoots, avoiding overcrowding and overcropping as the two greatest evils, subduing canker at the collar with quicklime well rubbed into the parts affected, removing every decayed leaf promptly. If mildew appear dust with flowers of sulphur, it being well to distribute some over the plants before mildew is seen. Aphides should be destroyed by careful and moderate fumigation with tobacco.

PLANT HOUSES.

Lapagerias.—Where these are grown in a little warmer house than an ordinary greenhouse they will have practically ceased flowering, and may be taken carefully from the roof to permit washing the glass and woodwork thoroughly. Some care is needed in taking the plants down, as their foliage is brittle, and the leaves are very easily broken from the stem. If aphides or thrips have established themselves on the plant dip them in a solution of tobacco water placed in a tub or tank. These insects are easily eradicated while the plants are loose. Thrips quickly destroy the foliage, and must be exterminated directly they are observed. Brown scale will also infest these plants, and while they are down it is wise to remove all by the sponge from the foliage. When

the plants are secured to the trellis again they should be syringed with petroleum and water; they will bear without injury 3 ozs. to four gallons of water. This is the best solution for scale, and will also destroy thrips at the same time. During the operation of training the plants under the roof remove portions of flowering wood down to the growth buds. These, if not cut away, only die back and disfigure the plants. This is all the pruning that the plants really need, unless the wood is becoming too crowded, when it is better shortened back than laid in.

Roses.—These are liable to be infested with scale when grown under the roof of houses occupied with plants that are subject to these pests. The best means of cleaning them is to syringe them after the completion of their growth with petroleum and water. They will bear without injury 1 oz. to each gallon of water. The foliage, or some of it, may fall afterwards, but this proves no detriment to the plants. Nearly all varieties in cool houses that are used for climbers, *Maréchal Niel* excepted, may have puny wood cut out and unripe ends of the shoots removed. The plants, through the lower temperature, will naturally go to rest, and light will be admitted to the occupants below.

Early Flowering Chrysanthemums.—It is a mistake to leave the propagation of these until the spring months. The season of growth is then too short for them to develop into strong specimens with a good number of shoots capable of yielding large fine flowers. Such varieties as *Madame Desgrange*, with its sports, as well as others, have now plenty of good sturdy cuttings upon them, and if inserted at once in a temperature of 50° to 55° they will not be long before they are rooted. Directly they are rooted they should be potted singly if not inserted in small pots to commence with. They should also be placed after they are potted in a cool house where frost is excluded. The point of the plant should be removed as soon as growth has commenced.

Tuberose.—Any plants that have their flower stems visible should not be in a lower temperature than 55° to 60°. They will advance freely in this temperature and open their flowers, which will be of the purest white. When developed in too low a temperature the flowers are frequently greenish yellow in appearance at this season of the year. Tubers that were potted a short time ago and plunged in heat should have the material removed that was used for covering the surface of the soil to prevent evaporation until growth and root activity had commenced. Water may now be applied whenever the soil approaches dryness. By no means allow them to become dry now that the roots are extending freely. The plants should be plunged as near the glass as possible to prevent the foliage drawing up weakly.

Abutilons.—These will flower throughout the winter if kept in a temperature of 60°. In a low temperature the buds fall in a small state or the flowers before they expand. If the plants are to continue flowering they must be encouraged to grow slowly. Where they are grown in pots it will be necessary to feed them with weak stimulants every time water is needed, or apply artificial manure to the surface once a fortnight.

Solanums.—A few plants that may have done duty in the dwelling house and lost their leaves may be pushed into growth for yielding cuttings for next season's stock of plants. Cuttings strike freely at almost any season in heat, and to obtain well developed well herried plants it is important to make an early start. By early striking hushy plants are ready for their final shift fully two months earlier than those raised from cuttings produced during the early months of the year in a natural way.

Cannas.—These are very useful for decorative purposes. The dark coloured foliage of several varieties is very effective either for groups in the dwelling house or conservatory. A few plants that have enjoyed a good period of rest may be started into growth in heat. As soon as they are moving divide them, and place each growing portion singly in 5-inch pots.

THE BEE-KEEPER

NOTES ON BEES.

BEET SUGAR AS FOOD FOR BEES.

At page 409 "Felix" says, "5 or 6 lbs. of good beet sugar syrup should at once be given as rapidly as the bees will take it." Now it is not a question of doctors differing, but one of bees. My bees and those of my neighbours seem to have a distaste for raw and beet sugars. Moreover, when they do take it, the bees invariably become unhealthy if it is consumed during the winter. Beet sugar is not so profitable as sugar from the cane, being lacking in saccharine matter, and although cheaper by the pound is the most unsatisfactory for the table or the bees.

He also says, "On the hive, then, which it is intended to feed, a piece of perforated zinc should be placed, large enough to take the place of the cover previously in use on this zinc; a piece 4 inches square is a good size, and can be used either on a straw or wooden hive." It will be observed from the above that the zinc

lies flat upon the top bars, so that when a small mouthed bottle is used very little surface is exposed for the bees to feed from. When feeding with the bottle I use a block of wood 2 or 3 inches deep, having a hole on the upper side sufficient to receive the neck of the bottle, and a smaller one on the under side about half an inch deep, the difference in the size of the holes being to leave about one-eighth of an inch of bearing for the neck of the bottle all round. In this way the bees have easy access to the syrup, and there is room for the bees to cluster and keep up heat at a time when it is absolutely necessary.

The best of all feeders is the frame feeder, having the trough nearly all its length in the top bar, and which places the syrup close to the bees. Weak hives may be fed with safety during winter with such a feeder, and the fountain above having a pane of glass on one side, a glance shows how the syrup is being consumed. The same fountain with a narrow tin scoop can be used as a bottom feeder, which, when the drawbacks of hives being capable of top feeding is taken into consideration, is the most natural and best way to feed bees, provided always no syrup is allowed to stand during the day.

UNSEALED STORES.

There is a general opinion amongst bee-keepers that stores should be fully sealed at this season of the year. Bees, even during very cold weather, will seal the greater part of their honey or syrup; it is natural for them to do so. But at no time do they seal it all, there being mostly some weeks' supply unsealed near the bees. It is when this unsealed honey gets exhausted during a period of protracted cold weather that bees are likely to die from want; but happily in this country the weather is seldom so severe as to preclude them from replenishing their wintering cells near the cluster from the sealed outer combs, which are always the first ones the bees empty. The so-called winter passages through the combs and above the bars with candy are inimical to the welfare of bees. The natural passages left by the bees are always round the ends of the combs, and we need not enter into any scientific explanation of the fact.

Bees always make an attempt to close overhead passage ways or spaces, and sometimes build their combs so close at the top as to touch each other. Why then should the nature of the bee be outraged by comical devices of man? I repeat again, to successfully winter bees keep them in single-cased hives well protected on the sides and on the top with an ample covering of well dried meadow hay, and over all an impervious roof projecting well over the sides and free from the covering above, so that the air can pass freely around and over. In addition to this have a properly constructed ventilating floor and a narrow entrance, and the bees, while honey is in the hive, will neither die from want nor cold, and the upper floor will never require cleaning.

THE WEATHER.

The weather keeping exceptionally fine, the day temperature being as high as 56° Fahr., and the bees, especially the Punic ones, are busy carrying pollen, the principal flowers being *Arabis*, *Wall-flower*, and *Charlock*. At the same date last year the bees had been confined to their hives for more than a month, so that whether the coming winter be a severe one or not they will have a shorter one, and from being stronger in numbers and having the daily flights are all the more promising for the bee-keeper. Should the spring and summer of 1890 be favourable a large harvest will be secured.

DECAY IN HIVES.

Many bee-keepers are realising the fact that double-cased hives are neither the healthiest nor the most lasting, and I have no doubt many will not renew them, preferring the more healthy and cheaper single-walled hives in the future.

STANDS.

These should be detachable (my own are mostly so) and of angled iron, which when tarred does not rust readily. Some people

are careless in not guarding against the decay of the legs of their hives, which they readily do when placed upon the ground without having a piece of slate or similar non-porous material beneath; but even when this precaution is taken decay soon sets in, through the capillary attraction of wood. Although slate is non-porous, still the wood absorbs and draws up the water as it lies between the foot and the slate, which is always present to some extent when the bodies rest upon each other.

To reduce the attraction of the feet of the hive for water place a small pebble or pyramid of lead beneath the foot, so that it will have little bearing; or drill a hole in the centre of the foot of a size to hold firmly a small marble bedded in white lead, so that it projects about a third. This will entirely prevent premature decay in the feet of the hive, and frequent coating of tar or creosote will further lengthen their days.—A LANARKSHIRE BEE-KEEPER.

GLASS SECTIONS.

SOME time during last autumn your correspondent, "A Hallamshire Bee-keeper," I think, promised to lay before your readers the secret of how to make glass sections as quickly and economically as wooden sections. I tried to draw this secret before he was prepared to part with it, and failed. I set to work, and with the aid of the glue-pot and some stout note paper succeeded in making a few dozens; but I would not like to tell your readers how long it took me to make them, nor how much they would cost per dozen if my time was charged at the rate of wage required by a dock labourer for overtime; nor shall I describe how gingerly they had to be handled and the difficulty of getting them to stand upright and fixing the foundation in them. In searching for something stronger than paper a friendly stationer suggested vellum tape, which was an improvement, but still it failed in keeping the sections square and rigid. Here the matter rested. The sections were put on the hives, in due time were filled with honey, and pleased everyone who saw them. Amongst others, with an eye to business, I exhibited the latest novelty to the representative of a local grocer. This gentleman informed me that a neighbour of his also made glass sections, and added that he put them together with tin, and that he believed he was going to have or had got a patent for it.

I thought of tin, and at night I made a glass section, which turned out to be identical with our friend's patent. Some weeks after this at a local flower show I came in competition with glass sections and met the enterprising patentee. My tin-and-glass section was produced, and I was most graciously told that he would forgive me for making that one, but in the most solemn tone ever assumed by patentee added that I must "never make another one." Now, I have every respect for patents, and wish to give all credit to the gentleman who was shrewd enough to think of tin for making glass sections and was enterprising enough to patent his invention. I have not yet seen it advertised in this Journal, nor in our local papers, but from what I hear they will add something over a shilling a dozen to the price of the honey without the glass. I hope I have been misinformed, as that will prevent their ever coming into general use when compared with wood sections at 2s. 6d. per 100.

Now, I would like to ask "A Hallamshire Bee-keeper," or any who are versed in patent laws, whether I can make these for my own use and place the honey in the market in the usual manner in them without being sued by the patentee? If I cannot do this can I with safety use tin in another and simpler way for the same purpose? as I suppose it is quite possible to improve on even a patent.—A SUSSEX AMATEUR.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.

In consequence of the extraordinary pressure that will be experienced during the Chrysanthemum season questions cannot be answered with the usual promptitude, and especially those arriving after Saturday. See notice below relative to the naming of fruit.

Chrysanthemum Sport (T. C. W.).—The bloom you send is very poor one, and if that is a fair example of the sport you may safely discard it, as it would be worthless.

Chrysanthemum Amy Furze (A. C.).—It would be much better if the catalogue were adopted as a standard of reference generally, but in the case of societies which are not affiliated this cannot be enforced, and the judges have to be guided by the conditions in the schedules, or in the absence of any stipulation they would be guided by the character of the blooms.

A Curious Error (F. D.).—The description to which you allude of Mr. Prentice winning all the first prizes in the fruit classes at East Grinstead "with very fine blooms," is both curious and amusing. The error is obvious, and the word "blooms" ought to have been printed "examples." It is not very surprising that the heads of reporters are filled with "blooms" at this period of the year, but the hurly burly will soon be over.

Chestnut Trees Dying (Twenty-years Subscriber).—If there is no noxious matter in the soil, but a fungus, as you suggest, is the cause of the misfortune, you cannot do harm by syringing the trees with a mixture of softsoap and petroleum, dissolving the soap at the rate of 2 or 3 ozs. to the gallon of boiling water, stirring in briskly while the solution is hot a quarter of a pint of the oil. If this fails try sulphide of potassium, following the directions that accompany it from the chemist.

Hibiscus Cooperi Treatment (T. T.).—The plants may be rested, allowing them to become tolerably dry during the winter, but not so dry as to cause the wood to shrivel. In spring they require a little cutting in so as to bring them into shape, and starting in a brisk moist heat, afterwards affording plenty of heat and water throughout the summer. When the plants break repot, keeping shaded until re-established. A compost of peat and loam, both fibry in equal parts and not broken too small, with the addition of a sixth each of sand and charcoal, suits this plant perfectly. The plant generally is best treated as an evergreen—i.e., not dried off in winter, though rested as other stove subjects. Strike some cuttings in spring and grow them on, young plants being more satisfactory than old stunted plants.

Destroying the Eggs of the Winter Moth (T. L.).—We are not aware that there are any means for the destruction of the eggs of the winter moths, the most widely destructive of which is *Cheimatobia brumata*. The moths appear between the beginning of October and end of December; the females being wingless must crawl up the trees to reach a suitable situation for laying eggs, or they may be carried from one place to another by the males, which are winged. That something of this kind occurs is evident from trees being infested with the caterpillars which have their stems protected by a sticky ring of grease which no crawling insect could possibly pass. The eggs are laid in the crevices of the bark and other places suitable for protection. The larvæ eat at first into the buds in early spring and completely destroy the prospect of fruit, and as the leaves enlarge the larvæ spin two or three leaves together and feed between them. When full grown the larvæ lower themselves to the ground, burrow, and form cocoons, in which they become pupæ at the end of May or the beginning of June. As to remedies, the best is that which aims at the destruction of the females. This is effected by wrapping the stems of the trees with a strip of Hessian about a foot wide, and smearing it with grease, tar and grease in equal proportions answering; but whatever is used it must remain soft and sticky, and be renewed as necessary to keep it in that state. Another means is to shake the trees when the larvæ is nearly full grown, cloths being placed on the ground to receive them, on to which the larvæ will fall, or let themselves down by silken threads, when of course they may be destroyed. The stems also should be smeared with some sticky substance to prevent the re-ascent of any larvæ falling and not being destroyed. After the larvæ pass into the pupa state, the only means that can be employed against them is to dig the ground occasionally so as to expose them to the discerning eyes of birds, which make quick work of the pupæ. Those means of riddance do not apply to your question of destroying the eggs, which we fear must from the care taken by the females in their deposition, be precarious, but we see no reason why means should not be taken when the larvæ are about to issue from the eggs, or before they have eaten into the buds, to combat them. Probably a solution of Paris green would be effectual, applying it at such time in March or early April as the buds commence to swell for expansion, mixing 1 lb. of this substance with thirty gallons of water. It may be applied with a syringe or garden engine, well wetting all the parts. It must be used with great care, kept from vegetables, and the operator must have hands free from sores or scratches, as it is very poisonous.



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Violets in Frames (V. S.).—Violets to flower freely in frames during the winter are prepared by planting small divisions or rooted suckers in April a foot apart in rich soil and a suitable position, watering them as required during the summer to ensure fine plants, and shortening the runners of those that need it, keeping the beds free from weeds. In September or early October the plants are taken up carefully and planted in frames that have until then been devoted to Melons or Cucumbers; or a gentle hotbed is made of leaves chiefly, and about 3 feet high. This is covered with a good soil about 9 inches thick, and made rather firm for the plants. They are well watered immediately after planting, and carefully afterwards. The frame is kept rather close for a few days, and then judiciously ventilated according to the weather, all decaying leaves being promptly removed. The plants so treated become established by the winter, and flower freely. The sides of the frame are protected with manure in severe weather, and the glass covered with mats and straw. If Violets are planted in beds of convenient size, and frames are placed over them, the plants flower freely. If your plants are so arranged that frames can be placed over them you would probably have better results than lifting the plants; but if they must be lifted and transplanted the work should be done at once, planting them so that the leaves of one plant nearly, but not quite, touch those of the others.

Clematis indivisa in Pots (Amateur).—This free-flowering and useful Clematis can be readily grown in the way you suggest, as shown in the illustration (fig. 57). The shoots require to be trained over a



FIG. 57.—CLEMATIS INDIVISA.

trellis, which they will cover with fresh green foliage and abundant pure white flowers. It is of easy culture, and needs little attention beyond keeping it free from insects.

A Caution to Gardeners (W. J. G.).—The only letter we have received from you on this subject is the one dated November 14th. The reports of the County Court cases against Mr. Mark J. Freeman at Exeter by gardeners are remarkable, and the evidence extraordinary. The defendant's answer to the question, "How many gardeners have you had the misfortune to differ with and peremptorily discharge in the last twelve months?" was "I really don't know." That he was wrong in his hasty action is clear from the cases being decided against him. He will probably continue advertising for gardeners, and it is only right that men should know of this litigation. We have no fruit from you, and as you may see from the notification below, Dr. Hogg is not in London to name fruit at the present time.

Chemical Manure (Disappointed).—If you refer to the mixture of superphosphate of lime, muriate of potash, and sulphate of ammonia, it is undoubtedly good when rightly used. It is doubtful if you have read carefully, and you appear to have departed seriously from the instructions. As you may see if you read the remarks again, the mixture is recommended as a supplement for, not an addition to, good farmyard manure, and if you used both they were not needed. If you used no farmyard manure you still erred in applying the mixture, as you say, "all through the season." It was only recommended to be used once, then if crops did not grow fast enough, to scatter amongst them a little nitrate of soda. You have possibly used ten times as much of the manure as is advised, therefore in extraordinary excess, hence the pithy condition of your Celery. The mixture is not the less good because of your misinterpretation of the instructions, which seem plain, and are founded on many years of experience.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds

should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Inquirer*).—The Bromeliaceous plant is Tillandsia carinata, which is known to some authors as Vriesia brachystachys. (*W. R. O.*).—1, Cestrum aurantiacum; 2, Stokesia cyanea; 3, Asplenium flaccidum; 4, Cyrtopodium insignis.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*H. E.*).—1, Beurré de Capiaumont; 2, decayed, possibly Beurré Clairgeau; 3, Green Yair; 5, Comte de Lamy; 6, Nec Plus Meuris. The Apple is Golden Spire. (*J. G.*).—1, Beurré Diel; 2, Beurré de Capiaumont; 3, Autumn Bergamot; 4, Beurré d'Amanlis; 5, Napoléon. (*G. R.*).—The Pear is a small Beurré Diel. The Ferns are much withered; both appear to be Adiantum cuneatum; our reply about Beet is in the affirmative. (*A. T. W.*).—Fearn's Pippin.

* * In consequence of Dr. Hogg's absence from London fruit sent to this office cannot be named by him during the present month.

COVENT GARDEN MARKET.—NOVEMBER 20TH.

MARKET very quiet, with good supplies. Prices unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	3	0 to 7	Oranges, per 100	4	0 to 9
" Nova Scotia and			Peaches, dozen	0	0
Canada, per barrel	15	0	Plums, $\frac{1}{2}$ sieve	0	0
Cherries, $\frac{1}{2}$ sieve	0	0	Red Currants, per $\frac{1}{2}$ sieve	0	0
Grapes, per lb.	0	6	Black " " " " " "	0	0
Lemon, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Lettuce, dozen	0	9 to 1
Asparagus, bundle	0	0	Mushrooms, punnet	1	6
Beans, Kidney, per lb. ..	0	2	Mustard & Cress, punnet	0	2
Beet, Red, dozen	1	0	Onions, bushel	3	0
Broccoli, bundle	0	0	Parsley, dozen bunches	2	0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	6	Parsnips, dozen	1	0
Cabbage, dozen	1	6	Potatoes, per cwt.	4	0
Capsicums, per 100	0	0	" Kidney, per cwt.	4	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Caniflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	0	Scorzoneria, bundle	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	8
Cucumbers, each	0	3	Spinach, bushel	1	0
Endive, dozen	1	0	Tomatoes, per lb.	0	4
Herbs, bunch	0	2	Turnips, bunch	0	4
Leeks, bunch	0	2			

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 12 blooms ..	3	0 to 6	Mignonette, 12 bunches	2	0 to 4
Asters, per bunch, French	0	0	Myosotis or Forgetmenots		
Bouvardias, bunch	0	6	doz. bunches	1	6
Camellias, dozen blooms	1	6	Narcissus (Paper-white),		
Carnations, 12 blooms ..	1	0	dozen sprays	1	0
Christmas Roses, 12 blms.	1	0	" French, 12 bunches	4	0
Chrysanthemums, dozen			Pelargoniums, 12 trusses	0	9
blooms	1	0	" scarlet, 12 bunches	3	0
Chrysanthemums, dozen			Primula (double) 12 sprays	1	0
bunches	2	0	" (single) 12 sprays	0	9
Dahlias, dozen bunches ..	2	0	Roses (indoor), dozen ..	0	6
Epiphyllums, doz. blooms	0	6	" Mixed, doz. bunches	3	0
Eucharis, dozen	3	0	" Red, dozen bunches	12	0
Gardenias, 12 blooms ..	3	0	" 12 blooms	1	6
Gladiolus (various) dozen			" Tea, white, dozen ..	1	0
sprays	1	0	" Yellow	2	0
Hyacinths (Roman) dozen			" French, per bunch ..	2	0
sprays	0	6	Spiraea, dozen bunches ..	0	0
Lapageria, 12 blooms ..	1	0	Stephanotis, doz. sprays	3	0
Lilium, various, 12 blms	2	0	Sweet Peas, doz. bunches	0	0
Lilium longiternum, 12			Taberones, 12 blooms ..	0	6
blooms	3	0	Violets, dozen bunches ..	1	0
Maidenhair Fern, doz.			" French, per bunch	1	3
bunches	4	0	" Parme, per bunch	3	0
Marguerites, 12 bunches	2	0	White Lilac, Fr., per buch	6	0

PLANTS IN POTS:

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Foliage plants, var., each	2	0 to 10
Aran Lilies, per dozen ..	9	0	Hyacinths (Roman) 12 pots	9	0
Arbutus (golden) dozen	6	0	Geraniums, Ivy, doz. ..	0	0
Begonias, various, per doz.	4	0	Lobelia, per dozen	0	0
Balsams, per dozen	0	0	Marguerite Daisy, dozen	6	0
Caladiums, per doz.	0	0	Mignonette, per dozen ..	0	0
Calceolarias, per dozen ..	0	0	Musk, per dozen	0	0
Christmas Rose	0	0	Myrtles, dozen	6	0
Chrysanthemums, dozen	6	0	Nasturtiums, per dozen ..	0	0
Dracena terminalis, doz. 24	0	42	Palms, in var., each ..	2	6
Dracena viridis, doz.	12	0	Pelargoniums, scarlet, 12	0	0
Epiphyllum, per doz.	12	0	Primula (single) per doz.	4	0
Erica, various, dozen	12	0	Rhodanthe, per dozen ..	0	0
Euonymus, var., dozen ..	6	0	Saxifraga pyramidalis,		
Evergreens, in var., dozen	6	0	per dozen	0	0
Ferns, in variety, dozen	4	0	Solanums, per dozen ..	6	0
Ficus elastica, each	1	6			



THE FLOCK IN WINTER.

THE LAMBING.

TAKEN from the Dorsets onward through tup breeders flocks to those of the ordinary farm flock, the lambing season may be said to extend almost throughout winter into spring. No fixed rules can therefore be laid down for it, but useful hints may certainly be given for general guidance, especially of home farmers, with whom the time of lambing should always be one of expediency and not of necessity. By expediency we mean that the lambing should be so timed that there may be an ample provision of green food ready for the flock in unbroken successional crops as required. To ensure this there must be a certain proportion of arable land, and we question strongly the wisdom of laying down so much land to permanent pasture as we have seen on some estates. Extremes seldom answer, and we think farmers in the great corn-growing districts, and those in a purely grazing part of the country, might compare results, and discuss the reasons of success or failure in flock management with much mutual advantage. No discussion, and nothing we can say or write, will be of use to those who are ignorant of the actual requirements of a flock, and who absolutely court failure by reckless mismanagement. For example, we found a ewe flock which came under our care some years ago in April was upon poor pasture by day, and was driven to folds upon a bare fallow at night without any provision of trough food for the ewes, that while suckling lambs were thus kept fasting some thirteen hours, and were driven back to the pasture in a state of exhaustion. We know another flock at the present time for which indeed there is an abundant store of roots, but there is no green food for next spring except pasture, which is practically uncultivated, the only manure it has being that derived from unfolded sheep. If the spring proves a late one that flock is bound to suffer a certain amount of privation.

Pasture under systematic cultivation may undoubtedly be made to answer as well for the flock in early spring as almost any green crop on arable land; but unfortunately such pasture is the exception and not the rule. It might be managed this season by folding if begun at once, as a tolerably strong and early growth of herbage would then be insured, and there would be a considerable subsequent improvement in both respects if the pasture had an annual dressing of chemical manure in February. Too much stress cannot be laid upon this important matter, as it is quite certain that pasture generally would carry several more sheep per acre, and be available for the flock much earlier in the year if cultivated with as much care as arable land.

Valuable as rich pasture undoubtedly is, it cannot be regarded as a substitute for Rye, because that is by far the earliest of all green crops, and be it remembered that even Rye is much earlier on rich well drained soil than upon cold poor land. Rye is, therefore, an indispensable auxiliary crop for the ewe flock. Winter Oats, Winter Barley, Italian Rye Grass, Tares, and Trifolium incarnatum, where it will answer, all follow in useful succession. Before turning from spring green crops for the flock we would call particular attention to the early growth of Perennial Rye Grass. We have a large field of it which has been very valuable for early grazing, and its early growth in some new permanent mixed pasture renders that pasture much more useful for the flock in early spring than an old pasture adjoining it which is deficient in this much-abused, much-praised Grass.

Every home farmer should have a lambing yard opening upon good sound pasture. Such a yard by no means involves a heavy

outlay. It may be made in an angle of farm buildings with a wall or boarded fence on the other sides. A low lean-to roof right round the interior wall or fence, and two or three cross fences with span-roofs afford the shepherd ample means for the construction of pens, and to shelter the entire flock as may be necessary. We recommend such yards both as a means of saving time and expense, and avoiding the annual construction of temporary folds, which are in the end much more expensive, and hardly ever answer so well. A really good shepherd is invaluable, and he should have all reasonable assistance both in the preparation of the fold and pens, and in the carting of food. Under good management there will have been a sensible exercise of foresight in the storage of roots and fodder close at hand for lambing. The shepherd must live with the flock then, and he should have a sufficiently commodious and comfortable hut for his accommodation. We allow the shepherd 6d. per head for all the lambs in healthy condition at weaning time. This acts as a healthy incentive to exertion, and is entirely in the master's interest. It is money well spent and well earned, and we have found the plan answer better than a high rate of wages without it.

(To be continued.)

WORK ON THE HOME FARM.

A wet October brought work on the land to a standstill, but so far November has brought us fine weather, and capital progress has been made with Wheat sowing, while forward crops of winter corn look exceedingly well, and the quickly raised cry about arrears of work and land to be left unploughed till spring is as quickly hushed. Farmers are said to be notorious grumblers, but we generally find that those who are loud in complaints of bad seasons and hard times are not the men who strive most to improve their practice and see if more cannot be done with the land. We would urge upon every farmer the importance of careful thought about the work and its object on his particular farm during the next eleven months. No doubt Barley is the most profitable grain crop now if it is really well grown, well harvested, and not forced upon the market out of condition. But if repeated trials have shown Barley to be an unsuitable crop for certain land, why it is simply suicidal to keep on sowing it. Upon a certain heavy land farm in hand we have gradually curtailed the Barley area, and extended that of winter corn simply because it answers best. The one difficulty about this change is to convince those interested that Wheat may be grown to profit in the same field year after year. We know men now agents of large estates who boldly proclaim their ignorance of scientific farming by outspoken expression of their disbelief in chemical manures. Such men will certainly one day find they are left behind in the race, for science and practice are daily becoming more united.

Upon all heavy land as much rigging as possible is being done, not only for root crops, but also for spring corn. Full reason have we to like the plan, for the land becomes so softened by its thorough exposure that we are able to push on spring work long before we could do with ploughing on the flat. Everything that can wait without material harm must give way for ploughing, one acre of land ploughed now being worth two left till spring. This, and getting superfluous water from the land speedily are the most important things now next to the finishing of winter corn sowing, which ought to soon be done with upon every farm.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. November.		Baromet. at 32" and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday		10	30.384	50.2	46.8	N.	47.8	55.5	46.8	75.2	38.4	—
Monday		11	30.444	52.0	50.3	N.E.	47.9	53.9	50.4	58.2	37.4	—
Tuesday		12	30.491	41.9	40.7	N.E.	48.0	45.6	39.7	56.4	32.9	—
Wednesday ..		13	30.348	34.7	34.7	S.W.	43.4	44.8	32.2	54.6	24.9	—
Thursday		14	30.340	44.4	44.4	S.W.	44.0	51.0	34.0	52.4	30.8	—
Friday		15	30.373	50.7	50.2	S.	45.1	57.4	44.1	65.6	30.9	—
Saturday		16	30.5.2	50.4	49.8	S.W.	46.7	52.8	49.3	56.6	42.0	0.010
			30.460	46.3	45.3		46.4	51.6	42.4	59.9	35.3	0.010

REMARKS.

- 10th.—Cloudy early; fine and generally bright day.
 11th.—Cloudy early; mild, dull and damp day.
 12th.—Bright and fine in the morning, sun shining through hazy cloud in afternoon.
 13th.—Fog, rather thick till 11, then sun shining through very slight fog.
 14th.—Rather dense fog, gas necessary almost all day.
 15th.—Cloudy early; sunshine from 11.30; misty evening.
 16th.—Overcast all day, very dark for two or three minutes about 0.15 P.M.
 High barometer; cloudy nights; fog and damp air, but no actual rain, the 0.01 inch on 16th being due to wet fog.—G. J. SYMONS.



SPIRÆA JAPONICA.

NEVER perhaps in the history of this country have so many schemes been advanced for cropping land to prove remunerative as at the present time. Fruit-growing is a general topic of conversation, and we hope that good will result; in fact, we are confident on this point, for the subject has advanced to such a stage that it will not be allowed to fall again into the background. While our attention is directed to a subject of such national importance as the production of our own fruit, there are many who have land that will not be able to enter into this enterprise, and might do worse than consider the culture of other plants and roots that we have to import annually. The *Spiræa* is one of those that can be grown as well in this country as on the continent. At the present time we rely almost exclusively on imported plants, and this is to be regretted when equally good clumps could be grown at home. I do not for one moment think that it would pay those who live in the neighbourhood of towns where labour and land are dear to produce those they need for growing in pots for the market or for supplying cut flowers. But there is abundance of land of a light sandy nature near our coasts, and extending a few miles inland, that is now growing nothing but coarse grass and weeds which I have no doubt could be obtained for a low rent per acre, and could soon be rendered sufficiently fertile to grow these plants to perfection. To set aside what we may at present regard as waste land, there is plenty under cultivation that would be suitable for these *Spiræas*, though occupied at the present time with crops that do not yield one-half the return that could be thus obtained. As growers have relied so long upon continental plants they might be prejudiced at first against those grown here, but this could be quickly overcome by proving that they would flower profusely. All that is wanted are good clumps that will throw up plenty of large bold spikes of inflorescence.

The reason sandy soil is advocated is because it is easy to work, and quickly rendered fertile by the addition of manure. Planting and lifting could be done at almost any time, and for the latter the soil could be shaken out of the roots so much easier than soil of a heavy or moderately heavy nature. This is not all, the crowns would ripen earlier and better on light than heavy land. Light sandy soils are rarely, even during the driest of weather, destitute of moisture. While they appear dust dry on the surface they are usually moist below, a condition that would suit these plants admirably. We have abundance of land in this country very similar in every respect to that upon which they are grown in the neighbourhood of Ghent.

A large stock of plants could quickly be obtained when once a start was determined upon, and it is almost needless to enter into particulars how a stock could be raised and suitable plants for forcing produced without loss of more time than is really necessary. In nearly all undertakings some time must elapse before a return could be looked for, and the cultivation of *Spiræas* is no exception to the rule. The best, perhaps, and unquestionably the cheapest method of raising a stock quickly would be to obtain from some large grower of flowers for the market his stock of plants after he has cut the flowers from them, which plants in the majority of cases are thrown out. Any grower would rather dispose of them for a trifle than throw them away. These if planted thickly together in rows until autumn would be suitable for cutting up for stock. If

they could be left until the autumn following, a larger and better stock would be at hand to start with. Plants that flower profusely outside one year are in the best possible condition for lifting in autumn, cutting up and planting for forcing in the following year. After the plants flower weak crowns are produced, and these need one clear season's growth in which to attain a flowering size.

Spiræas placed out thickly together after forcing, even if left until the second autumn before they are divided, have seldom any but small crowns. Being planted closely together prevents the crowns developing sufficiently. When lifting for forcing there are generally some clumps that are not strong enough for flowering, and these are reserved for dividing and planting again. When good sized pieces are planted suitable portions can often be cut from them, and do well for planting for the next year's stock, but if the clumps were grown specially for the market their appearance would be destroyed if cut at lifting time.

Stock plants may be lifted at any time from the end of October or after the foliage has died away, and may be divided ready for planting. Roots that have flowering crowns may be cut very small and planted out 8 or 9 inches apart each way and allowed to flower. The crowns will increase rapidly after flowering, and be good for planting in autumn 1 foot apart and 14 or 15 inches between the rows. Small roots to start with generally make the best shaped clumps. The roots selected have seven or eight crowns each, and are planted as the work of digging the ground is proceeded with. The soil is firmed about them by pressing it with the foot after the clumps are placed into position. The crowns are as near the surface of the soil as possible, being only just covered. Manure is spread on the ground and dug in as the work of planting proceeds. Old manure, or that employed with leaves for hotbeds, is preferred.

The position selected should be an open sunny one, and the ground in the early part of the season must be kept free from weeds. After the plants begin growing the hoe should be frequently used. It encourages rapid growth early in the season, which is a decided advantage in the development of large crowns early in the autumn.

For years we have prepared plants for forcing in the way advocated, and have never been disappointed with the manner in which they have flowered; in fact, they have been forced as early and produced as many flowers equally as fine as any we have been able to obtain from imported clumps.—NORTHERNER.

THE ARRANGEMENT OF COLOURS.

COLOURS may be divided into two classes, the warm and the cold. Warm colours are scarlet, red, crimson, pink or rose, yellow, and orange; cold colours are blue, purple, lilac, and white. Now, if these colours are all mixed indiscriminately, without any regard to effect, though the garden will undoubtedly be variegated and mottled enough, yet the pattern will be confused, and except by chance there will be no breadth or depth of colour for the eye to rest upon. We shall much sooner be weary of looking upon such a scene, where every part presents the same discordant features. This was the great defect of the regularly mixed flower border. The eagerness with which the more modern fashion of grouping masses of colour has been taken up and followed by the owners of gardens proves that the association of colours in harmonious arrangement is felt to be a good desirable to be attained, and yet how often is this desideratum left to chance! The gardener having plants, of colours various enough in all conscience, makes an arbitrary selection. His resolve goes no further than this—"I will have this bed scarlet *Verbenas*, that bed purple *Petunias*, the other yellow *Calceolarias*; this little bed shall have blue dwarf *Lobelias*, that large one blue *Salvia patens*, a third scarlet *Salvia fulgens*, a fourth scarlet *Pelargoniums*; yonder little one shall

hold some white Bellflower ;" and so on till all the beds are filled with larger or smaller patches of colour ; but the mixture is quite as bad and as ill associated as the old mixed flower border.

Now, the merest tyro amongst our readers who thinks at all about the matter will say this random way of laying on the colours of our flower gardens is anything but good taste. How is it to be corrected, is the question ; how shall we learn to avoid such errors ? Our answer is, By studying the affinities of colours, by having a ground plan of the garden, and arranging the colours on that plan previously to putting in a single plant. The brightest and warmest colour (scarlet) may be placed in the centre or centres, the next (red or crimson) surrounding it, with a bed or two of the less glowing colours (yellow and orange) intermixed with rose or purple. Then follow these with the colder colours of blue or purple, bringing them down to lilac and white. If this plan is followed, with some modification or softening, the whole will have that pleasing harmonious effect so desirable in garden scenery.

Contrasts may be followed sometimes, but not too often. Never imagine that one flower sets off another unless there is an approach to affinity between them. To follow the simile, the natural rose on the cheek of "the fairest of the fair" is more pleasing than the blackest patch, because it is more in harmony with the natural colour of the rest of the face ; hence the fashion of wearing patches as contrasts has disappeared, we trust, for ever. Study, then, the affinities or relations of colours, and never act to any extent upon that saying—a black will set off a white.

Where there are no beds to group flowers in masses the same principles ought to guide us in planting borders, or even shrubberies and Rose gardens ; let the colours gradually, as it were, melt away into each other. What a wide field is here opened to us of pleasant labour and delight. To what a great extent the true principles of arranging colours may be carried. These principles may be applied to the arrangement of a simple bouquet of four or five flowers, as well as to the magnificent array of floral objects in the large exhibitions. They may be applied quite as correctly in the flower border or beds of the cottage as in the largest conservatories and flower gardens of the royal or princely mansion. We might enlarge much on this fascinating subject, but other objects press upon us. Enough has been said, we trust, to induce both amateurs and cottagers to think on the effect of a better arrangement of colours previous to filling their beds and borders with flowers another season.

Rustic baskets and vases judiciously placed near to the dwelling house, either on the pillars of a low wall or on pedestals, on a terrace walk, or one on each side of the entrance to the house, they are quite proper and in good taste, if not too numerous or too large in proportion to the size of the garden or house. Vases to grow plants in can be had of almost any size and form from the different manufacturers.—AN OLD GARDENER.

GARDENIAS AND STEPHANOTIS.

My object is to describe as clearly as possible the cultivation these will succeed under when occupying one house, and especially is this recommended where economy of space is a consideration. It is common in most gardens to see the Stephanotis trained to the roof of a stove—a good place I admit where no other is at command. The plants to occupy the house under such dense foliage will, however, make weak sickly growth compared with those in an open position. Assuming, then, you have a low pit or small span-roofed house, the roof should be covered with wire trellis about 8 or 10 inches away from the glass, and 8 inches apart. The stage should consist of slate slabs, or oak boards 2 inches thick, and when placing them in position have room for free supply of water, as abundance of drainage is required. Thoroughly clean and white-wash the walls to completely destroy all insects ; prepare a compost of good loam and peat in equal parts, and to every four barrow-loads add 1 bushel of charcoal. Previous to taking it in place a layer of turf grass side downwards, then the compost about 4 inches in depth.

When this is done the Stephanotis should be planted at one end of the house in a mound on the top of that previously brought in ; thin and tie the growths to the wires, then give attention to the Gardenias, planting as recommended for the Stephanotis, for when growth commences roots will soon be seen protruding through the sides of the mounds. When such is the case add more compost, which will assist them wonderfully. Keep them syringed two or three times a day, and especially at closing time. A temperature of from 65° to 80° in summer, and from 60° to 70°, &c., in the winter, or even a little less, will not harm them. The plants are both subject to mealy bug, but there is no difficulty in keeping them clean when grown together if syringed once a fortnight with a mixture of warm water and petroleum, and then syringing them

immediately after with clean water. Little need be said in favour of their qualities ; as cut flowers they are especially adapted for bouquets and other decorations, and they command great favour on account of their fragrance.—R. KIRBY, *Oulton Hall, Leeds.*

WEeping TREES.

A BETTER name for trees of this description would be drooping, for they are trees the branches of which, instead of growing in the more general way upwards, send their slender shoots downwards. The Weeping Willow, the Weeping Ash, and the Weeping Elm are the most familiar examples of this mode of growth. In order to have handsome trees of this description it is necessary to graft or bud the weeping variety on tall upright species of the same genus. Choose such as have clean straight stems ; prune off all the small branches to the desired height, and if there are three branches near the top leave them on to receive, at the proper season, a graft on each. The tree will then sooner make a good head of weeping branches, and be equally balanced on each side.

June is a good season for budding upright-growing Willows, Ashes, Elms, Beeches, and Laburnums, as will make good stocks with drooping varieties. Should these buds succeed you will secure a growth early in the following spring. Should part of the buds fail the stocks will be in good condition to graft in the March or April following. These stocks should not be worked—that is, grafted or budded—till they have attained the height of 8 feet, or thereabout. There is no objection to 10 or 12 feet in height, but rather an advantage, especially in such strong and rapid growers as the Weeping Ash and Elm. By having straight stems of such altitude the trees will form a natural shady harbour, under which, when the weather is hot, chairs or rustic seats might be placed. For such weeping shrubs as the several kinds of Cytisus, and Roses that have pendant habits, stocks of lesser heights would be more desirable, and for this reason, that as they are grown chiefly for their flowers, those ought not to be too much elevated. From 5 to 6 feet will be quite high enough.

We have already alluded to one use to which trees and shrubs of this description may be applied—that of forming a leafy bower, as shelter from the burning heat of the sun in summer. They are also sufficiently ornamental to be very desirable. What is more elegant and graceful than a drooping tree, a Willow or a Birch, especially ? What more beautiful than the pendant Rose, its branches clothed with flowers of every hue ? Then the pretty Cytisus, either with purple or white flowers, is very ornamental in front of the shrubbery, in the middle of a bed of flowers, or planted on the lawn. As ornaments, then, in garden scenery, they are of use and very desirable. Some of them, and more especially the Weeping Willow, are very beautiful if planted near the edge of a piece of water. There they are quite in character, and the more so from the pleasing shadow they cast upon the water. No other kind of tree except, perhaps, the Cypress, is so well adapted as a memorial of departed friends. The faithful servants of Napoleon showed their attachment to their master by surrounding his tomb at St. Helena with the Weeping Willow ; and when they left the island they brought slips of those trees and planted them in their garden in "la belle France" as remembrancers.

The most extraordinary weeping tree we ever noticed is a common Ash (*Fraxinus excelsior*) of some 50 or 60 feet high, with a clean straight stem, had all its side branches pruned off to nearly the top of the tree. Upon the highest shoots some grafts of the weeping variety were inserted. They succeeded, and when we had the privilege of seeing them they had made considerable progress downwards with every prospect of doing well. A young Ash or Elm, or common Willow, may be growing in the shrubbery of an amateur or the hedgerow of a cottager's garden ; and though of themselves not uninteresting, they may be rendered much more so by grafting weeping varieties upon them. Thus the wonders of the grafting art may be shown in many an obscure nook throughout the land.—T. W. M.

LILY OF THE VALLEY.

THIS popular plant is so well known by everyone that no description here is necessary. It is in no way particular about soil, and it will thrive in sunshine almost as well as in shade, the latter, however, being generally selected for it. It does best in a substantial loam, or in any soils rich in humus—such as are obtained from decomposed leaves. It should not at any season of its growth be allowed to suffer from a deficiency of water. The roots and shoots grow so fast as to soon form a dense mass, and should therefore be lifted occasionally and divided, operating on a portion at a time. An annual dressing of manure over the crown in

autumn will be of great benefit to the plants. This plant, besides being grown in the garden borders, is in general demand for forcing. For this purpose it is best to obtain imported clumps or crowns as soon as they arrive from the continent if flowers are desired for Christmas.

Single crowns are preferable to clumps if early flowers are required. Of these from twelve to eighteen crowns may be placed in a 4 or 6-inch pot, using a compost of two parts turfy loam, one of leaf mould, and one of sand. The clumps may be managed in a similar manner. These should be well watered afterwards to settle the soil, and plunged in coal ashes or cocoa-nut fibre for a few weeks, introducing them afterwards into a temperature from 50° to 60°, still excluding light from the crowns. Supposing they are wanted by Christmas they should be brought into the forcing house, where a close atmosphere and temperature from 70° to 75° is maintained. They should never be allowed to suffer through insufficient supplies of water, requiring most when they are coming into flower; attention to this operation is very important. If desired for succession they should be introduced into heat every two or three weeks.—A. G. FRAMPTON.



IN THE NORTH.

HAVING business in several places just lately, I took the opportunity of paying a few interesting calls and taking a few notes, which you can publish or consign to the wastepaper basket. The first visit was paid to the well known and celebrated prizewinners amongst the Roses—viz., the Messrs. Harkness & Son. Their nursery is but a short distance from Leeming Lane Station on the branch of the North-Eastern Railway from Northalerton to Hawes. There I found the two brothers busy in their office. Time being short, in response to my inquiry as to where they grew their Roses I was soon shown some healthy well grown dwarfs, several thousands, to which Mr. Harkness proudly points, and says, "This is where we cut most of our blooms for the prize stands," and fine healthy plants they were, clean and sturdy. The soil seems to be of a sandy loam, and evidently suits Roses although so far north. I understand that they grow them better on the Manetti and seedling Briar, finding it suits some varieties to be on one and some on the other. There are many other plants grown besides Roses, such as herbaceous Pyrethrums and Violas, Polyanthus, Carnations, &c. I have several other notes, but they must wait.—A. J. B.

A COMING ROSE.

SOME seasons ago a young lady, Miss C. M., sowed just six Rose seeds, extracted from a heap that had attracted her notice. It was not a large sowing. Some of us have sown thousands of promising seed pods with very little result. Nothing, however, is like trying except succeeding, and hers has been a decided success. The heap was taken off good old Général Jacqueminot, but what the other parent was is quite unknown. The result of that sowing is a plant which has come into the hands of a well known Surrey firm, and which is being largely propagated. It is hoped it will next year come into commerce. It is said to be not unlike that grand old favourite, which even now and again asserts itself in the boxes, only much improved. More substance the one thing the General wants, and even more fragrance, the thing which has been sadly failing us in the new Roses of late years. The same firm have one or two other Surrey seedlings they hope will be heard of. I venture at any rate to predict a bright future for Miss C. M. when she makes her *début*. Let us hope the sullen Mole will appreciate his new neighbour, as Lord Byron says:

"The odorous purple of a new born Rose

Which streams upon his stream, and glassed within it glows."

—A. C.

THE CATERPILLAR PLAGUE.

ACCORDING to your courteously expressed request that I should place some communication in your hands on the very important subject of present prevention of winter moth laying their eggs on the fruit trees, I have pleasure in offering a few remarks. I fully believe that it is of the utmost importance to stop the ascent of the wingless moths by grease bands, or, at least, by sticky bands of some material which will hold the moths fast without hurting the bark of the tree. I have strongly advocated this in my annual reports—in my reports to the Royal Agricultural Society—and lately gave a special paper on the subject (headed Winter Moths—A Word in Season), in the number for October of *The Farmer's Magazine*. I quite agree with the importance of banding, and I believe we are all of one mind that unless the winter moths are stopped going up the trees there will be immense damage done next growing season, and I also consider that none of the various

methods of prevention suggested, that we know of at present, are so cheap, safe, and sure as grease-banding. But I certainly *do* think also that a little more attention should be given to the possibility of the outside of young trees being so much injured by grease (or deleterious matter mixed with grease) soddening into the thick bark and underlying layers of young wood, that it may be fatal to the tree. All of us probably who have attended to the matter know all about this, but in some cases a word of warning is wanted.

In the case of old trees with thick rugged bark, dead on the outside, probably even tar might be safely applied, for the layers of old bark lying between the tar and the wood immediately underlying the live inside bark would protect it almost as securely as would a layer of cork. I would give a word of warning in such cases not to smooth down the outside bark, as a correspondent recently told me he was doing, or results may be very bad indeed. If the tar or grease is of a nature that can readily pass into the tree, it is obvious that the minute cells of the wood and bark will be so altered that they will not be able to convey the sap, and the effect will be a dead band, or a band so injured as to be almost equivalent in bad effects to ringing.

I know only too well of this happening, and therefore I would strongly advise all growers to make sure that the grease is not mixed with tar, or residue of petroleum distilling, or too much caustic soda, or any other matter likely to burn or choke tender tissues. Failing the power to do this, the spending a little time in finding whose neighbours' trees suffered, and whose did not, from grease banding would be of use. I would also strongly draw the attention of those who have many quite young trees, to the method of banding now in use at the Toddington fruit grounds. This is to pass a band of the thin grease-proof paper round the stem; secure the overlapping edges by a strip of paste, and then lay the grease on in the manner advised by one of your correspondents, not with a brush, but with a flat piece of wood. If the paste does not stick at once, a twist of string round the paper, or of bass mat, and just tying the ends, secures it firmly. The paper prevents any grease, except what may run down, lying directly on the tree, and I am informed by Captain Corbett and Mr. C. Wise, with both of whom I had long interviews, that they consider this the best method of application.

With regard to birds, I should certainly think it was of great importance not to lessen the numbers of the more especially insect-eating kinds, such as various kinds of titmice, the nuthatches, and tree-creeper, in fact, most kinds, excepting the house sparrow, which does mischief by driving useful birds away. I do not myself feel so sure as some writers that the bullfinch is so very injurious, and would much like that, before condemning him, a careful post-mortem of contents of stomachs of a few specimens should be made, to see whether the abstracted buds had or had not a maggot within them.

I fear I have already written at too great length, and, therefore, do not now add anything regarding either measures of remedy when the caterpillars are present in summer, or regarding the winged moths now depositing eggs. But I should very much like to lay before your skilled correspondents a point which may be worth inquiry. In all the caterpillar troubles which have now been a very serious matter for some years, though I have had a great deal of communication from most of our fruit-growing counties, I have not had any that I can recall from Devonshire or Somersetshire.

I think that if attack had been bad it would have been reported to me; but if attack was not serious, what is the reason?

Is there a general difference in the method of treatment? Is it more general to have grass, as in some of the S.W. Gloucestershire orchards near homesteads—where presence of sheep, pigs, and poultry in their different ways lessen presence of coming attack beneath the trees? Or do the vast masses of Mistletoe and great beards of lichen, which, when I knew common Devon orchards, were considered apparently not to be objectionable, shelter insect parasites, and attract small birds' presence?—ELEANOR A. ORMEROD (in *Worcester Herald*).

SOME BRISTOL GARDENS.

AROUND Bristol there are many gardens of interest to the general observer, but in order to pay a visit to a number, or even a few of the most interesting, more time is required than many can afford to give up for such undertakings. Being on a brief visit to the "metropolis of the west," I was tempted to extend my journey outward that I might see what I could in the way of gardening pursuits likely to prove interesting and instructive, and in which I was not altogether disappointed. Being an Orchid and Chrysanthemum enthusiast, I wended my way to Springfield, the residence of F. W. Savage, Esq., Westbury-on-Trym, in which Chrysanthemums are very well grown on the large bloom principle. Between 100 and 200 are so treated, mostly Japanese and incurved. Among the former I noticed some capital blooms of Madame C. Audiguier, Jeanne Delaux, E. Molyneux, Comte de Germiny, Moonlight, Gorgeous, Baronne de Frailly, Carew Underwood, Mdlle. Lacroix, and Mr. Cannell, among many others, old and new. Some of the best of the incurved included Empress of India, Lord Wolseley, John Salter, Mr. Bunn, Jardin des Plantes, Lord Alcester, Emily Dale, Queen of England, Jeanne d'Arc, and Alfred Salter. The plants are arranged in a vinery so that each and every one comes well under notice, and this is greatly simplified in the dwarf character of growth. Some of the plants do not reach a height of more than 3 feet, although unstopped, while others range from 4 to 7 feet high.

Orchids are not to be counted in large numbers, but an unsatisfactory plant is not to be found among the various sorts grown. *Cattleyas* *gigas*, *Mendelli*, *Mossiae*, and *Gaskelliana*, among others, are represented by some very fine plants, which promise to make a good display in their season, judging from the vigorous growths and prominent flower sheaths. The *Laelias*, *Odontoglossums*, *Dendrobiums*, *Cypripediums*, *Oncidiums*, *Phaius*, and *Calanthes* each display good cultural treatment. A small piece of *Odontoglossum grande* was just unfolding unusually good blooms from three strong spikes, and *Calanthes* of the *Veitchei* and *vesutia* varieties are unusually promising, the flower spikes of which are the stoutest I have seen this year.

Eucharises also do well, and Mr. Edwards, the gardener, believes that to indifferent treatment may be traced the cause of the appearance of that undesirable mite pest. Frequent disturbance of the roots is avoided even with plants in small pots, for when they are furnished with a vigorous root action, encouraged by judicious applications of a stimulative nature, the mite has no chance to establish itself. Zonal *Pelargoniums*, both single and double, are allowed small pots only, and although they have furnished material for cutting for three years past, still the supply is maintained. Hard wood is more persistent in blooming, and is far more reliable to give a supply through changeable weather of the winter months than young yearly struck plants would be, and stimulants can be much more safely and effectively applied to older root-bound than to young plants.

Gloxinias are grown largely and well. Four one-light frames were full of healthy plants pointed out as having being raised from seed sown in February, and pricked out on prepared beds of fermenting material. About 6 inches of fine rich soil is placed in each frame, and strong growth is farther encouraged at the time when flower buds are forming by applications of diluted guano, a stimulant Mr. Edwards has much faith in. By growing them in this way there are chances of securing a stock of the very best, as all inferior ones can be discarded as soon as the first flowers are open. A houseful of these chosen ones must have been a fine sight, as I am told that from plants in about 7-inch pots as many as sixty or seventy flowers could be counted on each.

Some medium-sized bunches of *Raisin de Calabre* and *Lady Downe's* *Grapes* were still hanging in theinery, and provision is being made for a supply of *Peaches*, *Nectarines*, and *Plums* indoors, as a house in two divisions is almost completed. This is one of the lightest structures I have seen. Longitudinal bars are disposed so as to take glass squares probably 30 inches in length; these are fixed by copper clips, and none of the glass laps, but are fitted so perfectly that drip is unknown. This system involves a considerable saving in outdoor painting, as there is no woodwork exposed. A miniature lantern is raised by lever movement for providing top air; deep central-balanced lights are adjusted for giving abundance of front ventilation. Trees for the front are intended to be grown in pots, which will allow of the space being cleared in autumn in time for *Chrysanthemum* accommodation; those on the back wall are to be carried to the ridge of the three-quarter span-roof, which will allow of good depth for extension.

What has become an annual institution, and somewhat novel at Springfield, is an extensive decoration of the house and tables by the large exhibition blooms, and is given the title of a *Chrysanthemum* "feast," to which numerous guests are invited at a given date. Altogether the garden and indoor plants reflect much credit on its chief, who evidently is no novice in the various duties entrusted to him. From here I make my way by road and railway to pay a long promised visit to

MALMAINS,

Captain Belfield's well-known residence at Frenchay, near Bristol, being attracted thither more especially to see the magnificent collection of *Filmy* and *Tree Ferns*, of which I had heard a good deal. But no description, however lucid, could adequately describe the beauties and richness of the display of the *Todeas superba* and *pellucida*, the former figuring the most largely. Some fifty plants are to be seen which fill a house about 40 feet in length, every plant provided with abundant space to display its intrinsic beauty. They occupy large pots, and, if I remember rightly, each one stands on another inverted, and from their long standing, together with the moisture-laden atmosphere, cause a greenness of such density that moss covers many of the pots' surface. This condition, so objectionable with pot plants generally, becomes in this case reversed, as it generates a greater harmony with the dark green fronds of the *Ferns*. Efforts have also been made to furnish the walls of the house with seedling *Ferns*, but the atmosphere does not favour a permanent or continued growth from this source. I cannot say how long these *Todeas* have been established here, but the plants must be many years old, as some of the stems rise 3 feet or more from their pots, and are of large dimensions. They were collected and brought home by their owner, who is, and may well be, proud of the success which crowned his efforts.

In another large house adjoining are growing some *Tree Ferns*, probably 25 feet high, together with *Palms* and other plants, some of which were collected by the "Captain;" noteworthy among them being stately specimens of *Cyathea dealbata*, *Alsophila australis*, *Dracæna indivisa*, *Areca sapida*, *Kentia Fosteriana*, *Latania borbonica*, and the *Date Palm*, *Phoenix dactylifera*. These are arranged with excellent effect through the middle and sides of the tall span-roofed structure, probably 50 feet in length, through which the informal paths make a most exquisite promenade. The spaces beneath these veterans of the tropical forests are occupied with smaller plants of an evergreen character. No flowering plants are employed, nor indeed are they required, so plenty of space

is found for them in more suitable quarters. In the stoves are the usual flowering and foliage plants of large sizes, a division being set apart for *Ferns*, which consist principally of *Adiantums* and *Davallias* of exhibition quality and proportions.

Eucharises are a strong feature; one side of a large plant stove providing suitable accommodation for the goodly number of large healthy specimens, and which give good returns for attention bestowed. From twenty to thirty spikes are usually produced from each pot twice a year, and they seem to revel in the treatment they are subject to, and, fortunately, mite attacks are unknown. Orchids fill two houses. Among them are some fine specimen *Dendrobiums*, *Cœlogynes*, *Cypripediums*, *Cymbidium*s, *Cattleyas*, *Laelias*, and other species, many of them showing signs of improvement under the care of the recently appointed gardener, Mr. W. Rye, who for several years previous held the position of head gardener to J. Derbam, Esq., whose gardens were famous at that time from an exhibition point of view in the neighbourhood of Bristol. I must refer but briefly to one other garden which I had the privilege of inspecting—namely,

BROOMWELL HOUSE,

for many years the residence of W. Proctor Baker, Esq., whose late gardener was at one time one of the most successful growers of pyramid-trained *Azaleas*. At the time these were in perfection it was a custom with Mr. Baker to throw open the gardens and grounds for public inspection, but fashion has since changed, and the veteran *Azaleas* were disposed to give place to smaller and more useful material.

A good number of *Bouvardias* fills one house that for cutting will prove invaluable. Many are in 12-inch pots and form large bushes full of vigour. They are planted out for the summer months, which tends to save labour in watering, and their condition is all that can be desired. On the back wall of the stoves are trained two large plants of the seldom found but useful *Poinciana pulcherrima*, that furnish flower sprays almost the whole year when planted out, and under restricted pot culture it may be had in bloom for several months. At each end stand some very large and healthy plants of *Adiantum farleyense* 5 or 6 feet through. These are growing in a clayey loam, with only an addition of charcoal and sand for maintaining porosity, which appears to suit them well.

Some *Poinsettias* planted in shallow trays along the front of the stove will make an attractive display later on. The stems are bent and tied to one uniform height, which will bring their glowing bracts well within view, and also provide useful heads for cutting. In the same-house space is given up for *Orchids*, of which *Dendrobium superbum* is represented by some uncommonly fine growths, the largest being quite 6 feet in length and proportionately stout. *D. superbum giganteum* is also very well grown, and its extra large blooms are most attractive in the spring months.

The vegetable and fruit gardens each occupy separate positions. One thing that struck me as being uncommon in the latter was the system of utilising the walks economically and cheaply. *Cordon Apples* and *Pears* are planted at intervals of a few feet in pairs opposite each other, and trained on stout iron rods to form an arch, and when this space is filled wire is strained along so as connect one with another, lateral shoots being taken right and left and allowed to extend until the space is filled. By this method the ground can be utilised at a little cost, and it certainly adds to the interest of the garden as well as bulk in produce, and does not interfere with the convenience of attending to other parts of the garden as ordinary fixed archways do generally. The flower borders are planted with some choice varieties of herbaceous plants, and a vigorous specimen trained to a low wall of the showy *Clianthus puniceus* makes a pretty effect at its season of blooming. Much credit is due to Mr. Archer, to whom is entrusted the charge of the gardens to the satisfaction of his employer.—S.



FIRE HEAT AND DAMPING.

WHILST visiting an amateur friend of mine a few days since I was complaining how my *Chrysanthemums* had damped. He told me that as soon as he saw his begin to damp he turned on the heat in the house and well sulphured the pipes. My amateur friend has turned on the heat about twice a week since and has not had a single floret damp. I might say that when the heat was on he closed the house for about an hour. I think this would be worth a trial by large *Chrysanthemum* growers.—G. L.

STANDS FOR BLOOMS.

MAY I be permitted, through your columns, to inquire if the size of the exhibition stands for *Chrysanthemum* blooms as laid down by the National Society is generally considered the most suitable that could be devised for that purpose? At the late show of the Derby *Chrysanthemum* Association no particular size was imperative, but one exhibitor had his stands made to order in accordance with the sizes given by Mr. Molyneux in his book as the National standard, and they appeared suit-

able to the incurved classes, but for the Japanese were far too small, most of his blooms actually overlapping; and that exhibitor is not alone in thinking that but for this circumstance he would have been awarded first instead of the second prize he took in one of the Japanese classes. Can anyone say whether this experience is general, and, if so, whether there is any probability of the standard being raised?—INQUIRER.

CHRYSANTHEMUMS AT ANTWERP.

THE Royal Society of Horticulture and Agriculture of Antwerp celebrated the centenary of the introduction of the Chrysanthemum

CHRYSANTHEMUM MRS. JUDGE BENEDICT.

At the meeting of the National Chrysanthemum Society's Floral Committee, held on November 12th, Mr. R. Owen of Maidenhead exhibited a large collection of new Chrysanthemums, chiefly from American raisers and introducers. Amongst them were blooms of a large Anemone bearing the name Mrs. Judge Benedict, which attracted much attention owing to its distinctness and delicate colouring. The blooms were of good size, with a well raised and rounded disk of a soft yellow tint, the rosy florets of moderate breadth, even, and of a



FIG. 53.—CHRYSANTHEMUM MRS. JUDGE BENEDICT.

into Europe at an Exhibition held in the hall of the Royal Harmonic Society on the 17th, 18th, and 19th inst. Groups were tastefully arranged, but cut blooms left much to be desired both as to quality and staging. We have only space to say that Messrs. H. Cannell & Sons, Swanley, staged a good collection of Zonals and Chrysanthemums, including a dozen blooms of Etoile de Lyon, which caused quite a furore. A silver-gilt medal was awarded; and that in the amateur class the first prize, a gold medal, value 200 francs, was awarded to H. Vanderlinden, Esq. The second prize, a silver-gilt medal, value 100 francs, to J. Everaerts, Esq., both of Antwerp. The show was considered a great success.

delicate blush hue. The varieties of large Anemones suitable for exhibition are so restricted in numbers that any meritorious addition is most welcome, and we may expect to see the one represented in fig. 53 take a place amongst the best.

MADAME LOUISE LEROY.

We have had sent from Chilwell a spray containing several small and one good sized bloom of this promising white Japanese Chrysanthemum. The bloom somewhat resembles Avalanche in character, but it is more pure and clear, and its appearance suggests that if represented in the best form from selected buds, it might prove a rival to that

famous variety. The bloom before us is not quite 5 inches in diameter, but is one of the most attractive we have seen this year.

CHRYSANTHEMUMS AT WALTON LEA.

MR. W. KIPPS, gardener to John Crossfield, Esq., Walton Lea, near Warrington, is well known as an expert cultivator of Chrysanthemums, and with Mr. J. Wright judged the cut blooms at Birmingham. Mr. Crossfield kindly opens his gardens free to the people of Warrington, and on two days last week a constant stream of persons took advantage of the privilege accorded. The crowd was so great that hundreds could not pass through the conservatory, but had to be content with a view from the outside. Walton Lea is two miles from Warrington, and is as much famed for the specimen Hollies in the pleasure grounds, and the Camellias under glass, as for Chrysanthemums—indeed, the gardens are admirably managed throughout.

THE KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

THE annual dinner of this Society was held at the Sun Hotel, Kingston, on Saturday evening last. The President, G. C. Sherrard, Esq., J.P., occupied the chair, and in a most able address displayed the great interest he took in the Society. There was a very large attendance of members and visitors. The Treasurer, Mr. John Drewett, who is such a staunch friend of the Society, said that with one exception the receipts at the recent Show were greater than on any former occasion, and with the increased subscriptions the present year was the best financially since the Society was established. He was also able to state that another twenty-five-guinea challenge cup would be provided for competition next year. The proceedings were highly enjoyable throughout.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE Floral Committee of the above Society held a meeting in the Royal Aquarium, Westminster, on Tuesday, November 26th, at 2 P.M., R. Ballantine, Esq., in the chair, and the following members were present—Messrs. W. Holmes (Secretary), E. Sanderson, G. Gordon, L. Castle, G. S. Addison, H. Cannell, R. Owen, J. Kendall, G. Stevens, C. Gibson, W. E. Boyce, and J. Wright. Numerous novelties were exhibited by Mr. E. Beckett, Mr. R. Owen, Messrs. Carter & Co., and others, and several were considered promising, the exhibitors being requested to show them again another season. Only one was regarded as worthy of a first-class certificate—namely, a handsome Japanese named Volunteer from Mr. E. Beckett, one of the best additions of the season. It has some fluted recurving or slightly twisted florets, of a soft clear blush tint, the bloom deep, substantial, and grand for exhibition purposes.

THE GHENT CHRYSANTHEMUM SHOW.

THE Ghent Chrysanthemum Centenary Exhibition was opened on November 24th, when we are informed that there was a good display of plants, but comparatively few cut blooms. Of the English exhibitors a gold medal was awarded to Messrs. J. Laing & Sons, Forest Hill, for a collection of cut blooms; silver medals were also adjudged to Mr. E. Molyneux for cut blooms, and to Mr. Payne for an album of coloured plates. A gold medal was also awarded to the National Chrysanthemum Society as "a token of regard" from the Ghent Society. Medals were presented to numerous continental exhibitors in the various classes.

LOCAL MUSHROOM HUNTERS.

"AM I right for Rockingham, Sir?" said an old man as he got into a L. and N.W.R. carriage at Peterborough, in which sat an occasional correspondent. Having assured the old man that he was adopting the correct means for ultimately reaching Rockingham, other questions and answers followed, and the old man declared himself to be a Mushroom hunter. This was such an out-of-the-way occupation that the occasional correspondent began to think that it would perhaps form a subject for the gallery of local industries, and, therefore, plied the old man with questions fast and furious. At first the replies were simple and interesting, but later on, as the train was approaching Rockingham, the Mushroom hunter began to have some suspicions that he was being "fished." It evidently occurred to him that the occasional correspondent was seeking information, probably with a view of starting in opposition to himself. His change of manner at once became noticeable. He lapsed into a most guarded reserve, and the only information he vouched was to impress his auditor with the masses of wealth which Mushroom hunters were everywhere losing, and himself in particular.

But he had a ready—before the rash suspicion seized his mind—furnished some curious information concerning Mushroom hunting. He was then on his way to purchase seven tons of the edible fungi. He would sell them again to ketchup makers. He anticipated he would have to give nearly £60 per ton for them, and was, therefore, about to incur an expenditure of £420. Seven tons of Mushrooms! Where in the name of the sweet champagne would anybody get such a mass of Mushrooms as that from? Then he explained how it was done. The Mushroom hunter had to travel long distances by train and on foot, and he was obliged to have a boy and a horse and cart dancing attendance upon him. He himself had during the past few months travelled over the greater part of Lincolnshire and Huntingdonshire. His plan was to leave his horse and cart at a certain point and work round to it. He would travel perhaps twenty-one or twenty-two miles by train, and then proceed to

walk across country, having previously arranged his route, and call at all shepherds' houses. Why shepherds' houses more than anybody else's? Because shepherds walked over more grass land than anyone else, and were more in the habit of collecting Mushrooms than any other class. He invariably found that shepherds had a tub for Mushrooms, but many of them would not sell them at any price, as they made ketchup themselves and sold it to a circle of local customers. On the other hand many were willing and ready to sell their Mushrooms, and would often indicate that "Shepherd So and So had a tub to sell." But how did the shepherds keep their Mushrooms until the "hunter" came? They could not keep them for more than a day or so. Unless the Mushrooms were quite fresh they were of no use to the "hunter." Many shepherds would get a stone or so of Mushrooms a day, and in such cases the "hunter" would find a good tub full. These he would buy, and either late that day or early the following day he would retrace his steps with the cart and take them away and put them on the rail at the first convenient spot.

Then you are always sure of a customer? Oh, yes, he could find customers for as many Mushrooms as he could get. One ketchup maker in Peterborough had received an order for making a stupendous quantity of ketchup for Messrs. Crosse & Blackwell, and he knew he had a ready market for Mushrooms there. He had no difficulty in finding customers for them in large quantities. But do these ketchup manufacturers all use real Mushrooms? Is there no such thing as walnut-limmings employed? In the factories in which he had been in they all used Mushrooms, as they were cheapest in the end. In some years they were much more plentiful than others. The present year was very bad. They were extremely scarce. He had been obliged to give as much as £60 a ton often this year, while in other years he had been able to purchase large quantities for £40 a ton. But it cannot be generally known that they are so valuable, or more care would be taken to collect or cultivate them? He supposed that people must know that they were valuable, for they were generally sold in the shops at 6d. or even 10d. a lb. How would it be possible for anyone to collect such a quantity as seven tons of Mushrooms altogether? They would have to be collected in the way he had indicated. Half a stone here, three or four stone there, and so on. Collectors had to give good prices for these small quantities, for shepherds knew their value, and it often happened that after paying all his travelling expenses, the cost of his horse and van and boy, the profits were not very large.

As Mushrooms, however, do not grow all the year round, the occasional correspondent questioned the "hunter" as to his occupation when Mushrooms were not to be gathered, and he replied that he then went hawking crockery with his van. But by this time his suspicions had become aroused, and he gave many assurances that Mushroom hunting was a "losing game," and that he had had quite enough of it, that this was his last season he would have anything to do with it, and much more to the same effect.—(Peterborough Advertiser.)

SALT FOR FRUIT TREES.

I NOTICE, in an interesting paper on Plums read by Mr. T. F. Rivers at the Horticultural Club, reported in the Journal, p. 439, that he states an American writer finds common salt very beneficial for promoting health and luxuriance of Plum trees, but that Mr. Rivers fears to apply it. He need not be afraid to do so in limited quantities, such as usually given to crops. As our soil is very deficient in soda, and finding it very beneficial for Strawberries, which contain a good deal of this in their composition, and other fruits likewise being partly composed of it, and thinking that canker might be a result of weakness of constitution, owing to the deficiency of some element of plant food required, and as I take care that they have an abundance of those commonly needed, this year I added soda also, by means of an application of common salt at the rate of 2 cwt. per acre over the whole of my fruit ground, which contains all hardy sorts of fruit, and many acres of Plums, and I have been so far satisfied with the result that I propose repeating the dose next spring, and probably will make it an annual thing. Of course massive doses would kill vegetable life.—WALTER KRUSE.

HEDGE PLANTS.

OF the objects on which cultivation is brought to bear there is, perhaps, none that presents a greater diversity in the results sought to be attained than that most indispensable of all fences, the hedge. Timber, brick and stone, with or without mortar, as well as the varied forms that wrought and cast iron are made to take, all more or less compete with the living hedge as a boundary between properties and protection against cattle, but the hedge still survives, and imparts a degree of clothing to a district which artificial objects fail to do, also in most instances affording more shelter than the hand-made structure has any pretensions to do. My object, however, is not to contrast the merits of a live fence with those of a dead one, but to ascertain which are the most suitable plants for hedges, and to point out how one that was brought before the public some years ago as likely to be useful for the purpose, has failed, and is now but rarely met with; in fact, it now only occurs in the back-shrubberies, or other out-of-the-way places. Before drawing attention to the merits of other plants let us take a glance at this, and

see how far it is entitled to the high character given of it many years ago.

MACLURA AURANTIACA, OR OSAGE ORANGE.

A deciduous shrub of rather formidable appearance in consequence of the prickles with which it is armed, neither is it deficient in habit nor in hardiness for the purpose of making a fence capable of withstanding cattle; but somehow it has not found its way into general use, neither am I acquainted with any extent of hedge formed of this plant—in fact, I am not certain that I have seen it used at all in this capacity for some years, when a hedge of it was pointed out some years ago in Kent that was fully exposed on one side at least to the tender mercies of sheep and cattle, and it seemed to answer pretty well, was well clothed with foliage, and in other respects was a formidable closely trimmed fence. It was clipped at about the usual height for Thorn hedges, and when I saw it (September) it was a good rival to the Quickset. My impression at the time, confirmed by what I have noticed of some single plants here, was that the later growths of the season do not ripen, even in hot dry summers. Growth continues so late that the tips rarely harden sufficiently, and, like the Fuchsia, always die off, more or less, during the autumn or winter.

The plant seems to be well furnished with branches, and an abundance of very formidable thorns, much more so than Quickset—in fact, when growing amongst other shrubs, I do not know of anything more likely to keep out intruders. The foliage also is bright, shining, and on the whole attractive, and the growth of the plant in all the cases I have met with is as rapid as need be wished for in a hedge plant. I have been told that in some parts of the Canadian Dominion it is used for hedges where the climate is too severe for the Quickset; so that we may fairly place it amongst the hardiest of plants. Yet there may be a difference between an English and a Canadian summer that may enable the Maclura to endure the winter of Canada better than that of this country; for in all probability the fine sunny autumns of North America ripen the tips as well as the Hawthorn ripens with us.—J.



EVENTS OF THE WEEK.—The National Chrysanthemum Society's General Committee will meet at Anderton's Hotel, Fleet Street, on Dec. 2nd, at 7 P.M., the Centenary Sub-committee having a meeting at 6.30 P.M. on the same evening. On Wednesday, December 4th, the National Rose Society's annual meeting will be held in the Horticultural Club Rooms, Hotel Windsor, at 3 P.M., and the annual dinner will take place the same evening. The usual sales by Messrs. Protheroe and Morris and Stevens will be held during the week.

— A **LANDSCAPE** gardener, who had gained no mean degree of fame in this country, **MR. ROBERT MARNOCK**, died in London on November 15th last, in his ninetieth year. Mr. Marnock was early associated with the Sheffield Botanic Gardens, which he designed; subsequently he also laid out the Regent's Park Botanic Gardens, one of his principal works, which added greatly to his reputation. He was afterwards, for a number of years, engaged in laying out gardens in various parts of the kingdom, all of which showed considerable taste in design.

— **THE WEATHER.**—A change from a long period of mildness has occurred in the north. On Sunday night a storm is reported to have done considerable injury in some of the London market gardens. The temperature is now much lower, frost occurring on Tuesday morning, and snow falling freely in the afternoon in London.

— **MR. BLACKMORE'S PEARS.**—A fortnight ago we referred to this case of Pear stealing, in which a gardener pleaded guilty and was imprisoned, the greengrocer who received the fruit being remanded. He surrendered to his bail at the Middlesex sessions on Monday, and was sentenced to six weeks' imprisonment with hard labour.

— **GARDENING APPOINTMENT.**—Mr. H. Charles, late head gardener at Whitminster House, Stonehouse, Gloucester, has been appointed head gardener to Col. H. Davies Evans, of Highmead, Llanybyther, South Wales.

— **CYPRIPEDIUM SPICERIANUM.**—In our notice of this plant,

page 422, it should have been stated that all the plants at the Botanical Gardens, Birmingham, are growing in pans hanging from the roof, and in this manner the beauty of the flowers are best seen.

— A **LARGE CHESTNUT TREE.**—The following are the dimensions of a famous Chestnut tree growing in the pleasure grounds at Bestwood House, Stourbridge—namely, circumference 7 feet from the ground, 34 feet; spread of branches from north to south, 121 feet; from east to west, 100 feet.—F. ROBERTS.

— **THE** recent concert arranged by the members of the **CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION** in aid of the Gardeners' Orphan Fund was held in the Vestry Hall, Turnham Green, and proved exceptionally successful, and resulted in a sum of £12 being presented to the Fund named. Mr. G. Gordon, the Chairman, took a prominent part in the preparation of the programme and the disposal of tickets, being assisted by several members, notably by Mr. J. Barry, who, having sold the requisite number of tickets, secures a life membership in the Orphan Fund.

— **THE** Scientific Committee of the Royal Horticultural Society have issued a series of questions on the subject of **THE EFFECTS OF LONDON FOGS ON CULTIVATED PLANTS**. In order to render the information as practical and as accurate as possible, it is desired that the experience of the current season only be utilised. Fresh specimens of plants showing injury caused by fog to either flowers or leaves may be sent for examination, accompanied by full particulars, to Dr. D. H. Scott, F.L.S., Normal School of Science, South Kensington, S.W., or to Dr. Francis Oliver, F.L.S., Royal Gardens, Kew. It is desired that the returns be made up to the end of March, 1890, and then returned to the Secretary, Royal Horticultural Society, 117, Victoria Street, S.W.

— **QUEEN WASPS.**—A correspondent recently remarked that his prediction as to the wasp abundance was fully realised during the past summer, and advised a sharp outlook for queen wasps this autumn. Since the appearance of the advice given I have found quite three dozen at different times concealed or that had intended to conceal themselves in spaces between the wall and windowframe of our fruit room. They evidently found their way through the stone roof, which is unsealed, as no other means were open to them whereby admittance could be gained. It would be interesting to know if your correspondent or other readers have secured any in a similar manner. The low buzzing sound produced from slow wing movement was the first indication for research.—W. STRUGNELL.

— **EUCHARIS DISEASE.**—My experience coincides with "M. D.," page 349, with reference to the Eucharis disease or mite. A few years ago I had charge of several fine healthy plants of Eucharis grandiflora in pots. Unfortunately the boiler, a plain saddle, was underneath the house, and a flue from the boiler the whole length of the house. One cold night in February the flue burst. The effect of the smoke and sulphur can be imagined. The Eucharis leaves laid over the pot sides as though affected by severe frost. After that for about two years they never seemed to do any good. The bulbs were repotted several times, always getting less in size until they were at last thrown away. I may mention that the Eucharis cannot bear strong sunshine. Give it all the light possible without the burning rays of the sun coming in contact with the leaves, which causes them to flag and the edges to turn brown. If the plants are overwatered when the sun is on them they will soon be out of health.—DIS.

— **PRUNING SHRUBS.**—Your correspondent "P." drew attention to this subject recently. My experience, though not so extensive, is of some years' standing. I think the best time to do this very necessary work is during August and September, especially where the object is to keep "shrubs within bounds." In pruning for this end, the long strong shoots have to be cut well back, leaving the more numerous but shorter shoots to form the plant. If this is done in November, these shorter shoots, from the fact that they have been surrounded and shaded by these stronger shoots, are not likely to be so well matured as those cut away, and therefore will be less prepared to stand a severe winter as they would be had the same thinning been done earlier. Another advantage is that it can be done with much more comfort, as it is not a very pleasant job getting amongst evergreens in the dull damp days of winter, when they are oftener wet than dry.—R. INGLIS.

— **BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—The fortnightly meeting was held on November 12th, when Mr. J. Udale read an instructive paper on "Select Annuals for the Stove and Greenhouse," confining his list to twelve kinds only. These

were *Thunbergia alata* varieties, sown in shallow boxes in light soil, and transplanted into baskets or pots, recommending the adoption of the natural trailing habit of the plant to display its beauty, rather than the use of sticks. *Martynia fragrans*, sowing in succession from February to April in light soil, and covering the seeds with an inch in depth of soil, and place in a warm house. The varieties of *Celosia plumosa pyramidalis*, grown on in a compost of good loam, rotten cow manure, leaf soil, and sand. The varieties of *Torrenias* from seed, *Didiscus cœruleus*, *Browallia alata*, *Nicrenbergia gracilis*, *Balsams*, *Mignonette* of sorts, and *Zea japonica variegata*, for its bright variegation and ornamental character. In the discussion which followed a member asked Mr. Udale if he recommended the removal of the first blooms of *Balsams*, a plan adopted by many, and a reply in the negative was given. Mr. Hughes remarked that gardeners often experienced a difficulty in procuring seeds of a really good strain, and Mr. Spinks stated that in his experience of *Balsam* growing he had noticed that in order to make good pyramidal plants it was necessary to select seedlings which showed two growths or shoots. This Association has made great headway, and the library, now becoming an extensive one, is being considerably augmented. Mr. Hughes, the Secretary, announced as a present to the Association the gift from his employer of twelve volumes bound in half morocco of "Sowerby's British Botany," and "The Herefordshire Pomona," complete to date, the result of subscriptions collected by him for this purpose.

EUPATORIUMS.

It is surprising these are not given more prominence in advertisements and greenhouses at this season, and they are, in my opinion, the most easily managed and most floriferous of all white flowering plants from the beginning of October until January. They are evergreen, of a bushy habit, and they may be grown as specimens a foot high and the same in diameter in a 5-inch pot, or huge specimens from 1 to 2 yards in diameter may be produced in 10 or 12-inch pots, and in all cases they will be completely clothed with spreading heads of pure white flowers admirably adapted for vase decoration or furnishing crosses and wreaths. As I have hinted they flower for three or four months in succession, bear any amount of cutting, and require so little skill or attention, that the most inexperienced amateur would have no difficulty in securing abundance of flowers from them. They do not require to be forced to bring out the blooms, and they are perfectly at home in an unheated house or pit. They are easily propagated in spring, and they may be placed in the open air from June till September. A rich gritty soil suits them best, and they have the recommendation of being insect proof. I have grown them for many years, and they have never required cleaning, and they might be most profitably cultivated by all who desire to secure abundance of white flowers from early autumn until midwinter with trifling expense.—J. MUIR.

ALDIN GRANGE.

SOME time since an exceedingly agreeable day was spent in Durham and the gardens around that interesting old cathedral city, a journey undertaken in the company of an old friend, and with a genial and intelligent guide to show us what was worth seeing historically and horticulturally. An hour or two of a busily occupied day were spent at Aldin Grange, a few miles out from Durham, the residence of B. Cochrane, Esq. The garden is under the charge of Mr. W. Jenkins, who is known to many readers of this Journal by his practical contributions on various subjects, and enjoys somewhat more than a local reputation as a skilful gardener. The garden is not an extensive one, the glass accommodation is limited, and ornamental gardening is carried out on a moderate scale in such restricted space. Yet, as is often the case in small establishments, whatever is attempted is well grown, neatness and good culture prevailing throughout, and several useful lessons can be learnt by an inspection under the guidance of Mr. Jenkins.

Plants are not grown very largely, but amongst them are a few Orchids, of which *Dendrobiums* and *Phaius grandifolius* have been especially well cultivated. A group of these is represented in the woodcut (fig. 59, page 467), prepared from a photograph. These Orchids have not a structure specially devoted to them, but are grown in a mixed collection of stove plants, and are good examples of what can be effected in this way. There are some Orchids that succeed quite as well in an ordinary stove, provided they receive good attention, as if a house were devoted to them exclusively. One point, however, with regard to the *Phaius* should be mentioned—namely, Mr. Jenkins has found that it is easy to injure the plants by excessive resting, though some have strongly recommended a drying off process.

The plant stove is a span-roof structure, erected by Messrs. Richardson & Co., Darlington, and contains a good selection of plants. *Eucharises* have been infested with mite, but seem to be slowly recovering with the assistance of an annual washing of the roots with clean water; the best, however, are a few odd and inferior bulbs which were not thought to be worth potting, but by way of experiment were planted in cocoa fibre in the centre bed, where there is a good supply of bottom

heat. At the present time these appear to have outgrown the disease, and more are to be planted in the same way. A neighbour of Mr. Jenkins has succeeded on the same lines, but on taking the bulbs up and potting them they became unhealthy again. The *Camellia* house contains three very large specimens planted out, which annually produce large numbers of blooms. *Richardias* in 11-inch pots in this house are exceptionally good, with strong spathes.

There are four vineries. The earliest is planted with *Black Hamburgs* and *Foster's Seedling*. These Vines have been growing for the past five years in a border 3 feet wide by 15 inches deep, and with judicious feeding and top-dressing have produced Grapes every year equal to those growing in much larger borders. There are two rows of 3-inch pipes running under this small border, and what may appear strange is that the Vines annually retain their leaves longer than those in other houses which are started later. The second early house contains all *Black Hamburgs*, and many first-prize bunches are annually cut. The Vines have been planted about twelve years, the border inside and out, which has plenty of water at all times, including a good soaking of liquid manure water in the autumn. So strong was this given upon one occasion a few years ago that the whole of the paint became tarnished with the ammonia from the liquid that the whole had to be painted, but no other harm followed—quite the reverse. Another house planted five years ago contains *Alnwick Seedling*, *Black Hamburg*, *Madresfield Court*, *Duke of Buccleuch*, *Foster's Seedling*, and *Buckland Sweetwater*, all of which have produced prize bunches. The late vinery is facing due east, and so not well calculated to finish off *Gros Colmans* and *Muscats*. Nevertheless, by starting it in the middle of February *Gros Colman* is ripened by November. From this house many first prize bunches of *Alicantes* have been cut, some of which we have seen and admired, approaching Mr. Goodacre's celebrated bunch, about which the discussion arose, and which was figured in *Journal* some time ago. Nearly as fine samples were shown at York last week, and gained Mr. Jenkins the first prize in the class.

There are two ranges of Peach houses, the first in three divisions, planted with *Alexander*, *Hale's Early*, *Early York*, *Royal George*, and *Princess of Wales*, which ripen in the order named. The first-named is inclined to be over-vigorous, but is considered the best early Peach, being good in all points. *Hale's*, too, is an admirable Peach, closely following *Alexander*. *Princess of Wales* is, like many other showy kinds of fruit, not of the best flavour. One compartment in this range is chiefly devoted to *Nectarines*, *Hunt's Tawny* and *Stanwick Elruge* being the varieties grown, the former always colouring well, and carrying heavy crops annually. Another range in two divisions has recently undergone an alteration. The trees some twelve or fourteen years ago were planted against the back wall, but were not satisfactory; the houses have now been made suitable, and the trees planted in the front and trained under the roof in the usual way with the most gratifying results, so far as present appearances go. The varieties of Peaches are *A Bec*, *Bellegarde*, *Barrington*, *Royal George*, *Walburton* and *Late Admirable*; and the *Nectarines* *Victoria*, *Hardwicke*, and *Pitmaston Orange*.

In the Melon houses early crops of Tomatoes are grown front and back, at the back single plants in 11-inch pots are employed, *Dedham Favourite* being preferred to all others, while for a yellow *Harefield Grove* is grown. Melons follow the early Tomatoes, and a continual steady supply is secured from *Blenheim Orange* and *Best of All*. In one of these houses there is a large number of *Amaryllis* *aulica*, which commences throwing up its spikes in October and November, and the bright scarlet flowers are most useful during the winter. Some of these bulbs measure 17 inches round at the base, and most of them produce two spikes a year. The other section (spring flowering) is also represented, and although not consisting of the best modern varieties, there is a good collection. A large bulb of a variety named *Amazon* in the spring of last year produced five spikes, each containing four blooms, another four ditto, five bulbs producing an aggregate of seventy-five blooms. Yet the mite has been found in large numbers in this collection, many of the bulbs having decayed while growing side by side with these, and receiving the same treatment.

In addition to the walled-in kitchen garden of three-quarters of an acre, a piece about two acres has been fenced off by wire. Here the usual kinds of vegetables and Strawberries are grown. This land has been "farmed out," and was very poor, but with deeper cultivation and plenty of manure, chemical and otherwise, is being made to produce heavy crops. Strawberries are rather largely grown, over 2 cwt. having been used for preserving purposes this year, *Garibaldi* and *President* being mostly relied upon, although about ten other varieties are being tried, including *Noble*, *A. F. Barron*, *Burghley*, *President*, and others. A piece of ground is specially prepared, and good plants layered into 3-inch pots from plants put out the year previously, and a new plantation is made early in August. The plants stand for three years and are then dug up.—L. CASTLE.

CHRYSANthemum SHOWS.

ASCOT, SUNNINGHILL, AND DISTRICT.—NOVEMBER 12TH AND 13TH.

THIS Society held its sixth annual Exhibition of Chrysanthemums, fruit, and vegetables in the Grand Stand on the above date, but there were many blank spaces in the plant classes. Still, if the Show lacked quantity, the quality of the exhibits was fully up to the Ascot standard, which has always been high. Four competitors entered for the groups of Chrysanthemums to occupy a space 6 feet in radius Mr. Cowie,

gardener to Mr. Simms, Sunninghill, was first with a grand group, the plants well clothed with green healthy foliage, and carrying many fine blooms. Mr. W. Lane, gardener to Miss J. D. Smith, Ascot, was a close second; Mr. Hughes, gardener to H. F. de Paravicini, Esq., Heathfield, Ascot, third; and Mr. Hawthorne, gardener to Rev. B. K. Pearse, fourth. In the cut flower class centred in the competition for the challenge cup, to be won three times, with eighteen incurved and the like number of Japanese. Since it was offered in 1885 it has changed hands every year. This season it has been won by Mr. C. Page, gardener to H. P. Leschallas, Esq., Highams, Bagshot, the winner in 1887. The incurved blooms in the winning stand were clean, even, and very fresh. They were arranged as follows:—Back row: Emily Dale, Queen of England, Lord Alcester, Alfred Salter, Empress of India, and Golden Empress. Second row: Lord Wolseley, Princess of Wales, Violet Tomlin, Mr. Brunlees, Prince Alfred, and Mrs. Heale. Front row: Isabella Bott, Miss M. A. Haggas, Barbara, Lady Carey, Princess Beatrice, and Mabel Ward. The Japanese were large, bright, and fresh, being arranged as follows:—Back row: Stanstead White (this bloom received the National Society's certificate as the best Japanese in the Show), E. Molyneux, Etoile de Lyon, Madame J. Laing, George Daniels, and Triomphe de la rue des Châlets. Second row: Madame C. Audiguier, Sunflower, Mdle. B. Pigny, Ralph Brocklebank, Sarah Owen, and Mr. H. Cannell. Front row: Thunberg, Mrs. W. A. Harris, Balmoreau, J. Délaux, Avalanche, and Madame Baco. Mr. Lane, gardener to Miss J. H. Smith, last year's winner, was a very close second; his back row incurved flowers was heavy, and contained a grand Lord Alcester, which gained the National Society's certificate as the best incurved bloom. Mr. Hughes was a good third. In the class for eighteen incurved, open to all, Mr. Page was again first with a fresh even lot; Mr. Hughes was second; Mr. Cole, gardener to — Hamilton, Esq., Charteries, Sunningdale, third.

For the best eighteen reflexed, distinct varieties, Lady Isabella Keen offered a silver cup to be won twice in succession. Mr. Cole was first with a heavy stand of flowers; Mr. C. Page was second; Mr. Tomlin, gardener to T. Ashby, Esq., Sunninghill, third. Eighteen Japanese, distinct, brought nine entries, and Mr. C. Page won with fine heavy flowers; second, Mr. Thorne, gardener to J. T. Mackenzie, Esq., Sunninghill; third, Mr. W. Lane. The smaller classes were well filled, the prizes for twelve incurved going to Mr. Bullimore, gardener to A. Southard, Esq., Fern Lodge, Bracknell; second, Mr. Poppel, gardener to the Hon. Lady Stepney, Ascot; third, Mr. H. Godfrey, gardener to Mr. Rothery Ribsdon, Windlesham, Surrey. The corresponding class for Japanese to Messrs. Bullimore, Godfrey, and Tomlin in the order named. For six incurved, one variety, Mr. Godfrey won with good Empress of India, Mr. Hughes second, Mr. W. Lane third. Six Japanese, one variety, Mr. Page won with Triomphe de la rue des Châlets, grandly coloured, and of large size; Mr. Woodhouse, gardener to Miss Belcher, Sunningdale, second; Mr. Thorne third. Table plants, Cyclamens, and Primulas were well shown. Messrs. Sutton & Sons offered prizes for six dishes of vegetables, these going to Messrs. Poppel, Page, Hughes, and Worsfold in the order named. Messrs. Standish, Royal Nurseries, Ascot, had a large and beautiful group of Heaths, Palms, Chrysanthemums, &c., tastefully arranged. The Society have great cause to be thankful to Mr. J. Hay, gardener to Sir Arthur Hayter, South Hill Park, Bracknell, who carried out his duties with energy and tact.

TORQUAY.—Nov. 13TH.

THE most successful Chrysanthemum Show ever held at Torquay took place under the auspices of the Torquay Horticultural Society on the above date. The arrangements throughout were perfect, and the receipts nearly double those of any previous one. Of cut blooms there were about seventy stands in all, the premier prize being a silver cup value £5 5s. for eighteen incurved and eighteen Japanese, distinct. This was won by Mr. W. Dolling, gardener to Mrs. Wild, White Hill, Newton Abbot, whose incurved were, throughout the Show, extraordinarily heavy and fresh, though a trifle rough. His Japanese were small but fresh. The second prize of £3 3s. was won by Mr. Barnes, gardener to T. C. Daniel, Esq., Stoodleigh Court, Tiverton. In this stand, which was only just beaten for the cup, the Japanese were far superior to those in the first prize stand, but the incurved, though well finished, were small. Mr. Hobbs, gardener to Captain Philpotts, R.N., Chelston Cross, Torquay, took third prize, staging finer Japanese than the cup lot, but inferior to those in the second prize stand. His incurved were not strong. For twelve incurved, distinct, the first prize was taken by Mrs. Wild's gardener with heavy and fresh blooms, and the second by Mr. A. Serle, gardener to J. N. Whitehead, Esq., Gnaton, Torquay, with well finished small flowers, but rather past their best. With twelve Japanese, distinct, the first place was just won by Mr. Barnes, through one or two in the stand exhibited by Mr. Whitehead's gardener being past their best. Both stands contained excellent blooms. For six reflexed, distinct, Mr. Searle took the first prize, the other two exhibitors being disqualified for including Amy Furze; and with six Anemone flowered, distinct, Mr. Serle again won. For six reflexed, one variety, all three exhibitors showed Cullingfordi, Messrs. Dolling and Hobbs taking first and second prizes respectively from Mr. Serle with fresher blooms, though the latter's were much the deepest and largest. For six Anemones, one variety, the gardener to Miss Fripp, The Grove, Teignmouth, was first with a lovely stand of Fleur de Marie, Mr. Dolling being second. The difficult class of twelve blooms, one variety, brought a beautiful stand of Mdle. Lacroix to the front, exhibited by Mr. Whitehead's gardener, Miss Fripp's gardener being second with a fair stand of Meg Merrilies.

Six new varieties saw Messrs. Curtis & Sanford ahead, Messrs. Dolling and Searle following in the order named. For six single, Mr. Searle won with fine examples of Admiral Sir Thomas Symonds. In the amateur classes, which at Torquay are open to all except nurserymen, the competition was keen.

Groups were excellent, and in the first prize one, circumference 24 feet, exhibited by Mr. Whitehead's gardener, there was scarcely a bloom that would have been out of place on the show board. Other prizes in groups and plants were won by the gardeners of Captain Lane Tucker, J. N. Whitehead, Esq., Captain Philpotts, R.N., Lady Macgregor, J. W. Kimber, Esq., and A. Matthews, Esq.

GODALMING AND DISTRICT.

THE sixth annual Show of this Society was held in the Public Hall on the 13th and 14th inst., the specimen plants and cut blooms being of a very high order. In the class for six dwarf-trained plants, for a silver cup given by the tradesmen of Godalming, Mr. T. H. Cubbon, gardener to G. H. Pinkard, Esq., J.P., Combe Court, led with grand plants from 5 to 6 feet through, carrying over a hundred fine flowers. Mr. G. Edwards, gardener to the Dowager Countess Enniskillen, was a very close second. For one incurved specimen Mr. Edwards was first, and for one Japanese Mr. Cubbon was first. For the best group as grown staged for quality and effect Mr. Edwards won, Mr. Cubbon again following. For three trained Pompons Mr. Cubbon was first, and for single ditto Mr. Edwards first. For three plants in pots not disbudded Mr. R. Jordan, gardener to Miss Hallam, was first; Mr. King, gardener to — Cooper, Esq., second; Mr. F. Jordan, gardener to Birkett Foster, Esq., Witley, third. For a group of miscellaneous plants Mr. W. Wiles, gardener to C. Phillips, Esq., Unstead Park, was first.

The classes for cut blooms were keenly contested. For thirty-six—twelve Japanese, twelve incurved, and twelve Anemones—Mr. T. H. Cubbon took the lead, his chief blooms being Lord Alcester, Empress of India, Miss M. A. Haggas, Violet Tomlin, Princess of Wales, E. Molyneux, Condor, Madame Baco, Lady Margaret, and Annie Lowe; second Mr. Dodman, gardener to E. Evans, Esq., Witley; third Mr. G. Edwards. Mr. Edwards won with eighteen incurved, and with six incurved Mr. Nash, gardener to J. C. Ramsden, Esq., C.C., was first. For eighteen Japanese, distinct, Mr. Edwards was again to the fore with some grand blooms; second Mr. Dodman, third Mr. Cubbon, fourth Mr. Nash. Mr. Paddon, gardener to P. Ricardo, Esq., Bramley, won with twelve, Mr. R. Jordan being second, the latter winning with six. For twelve incurved first Mr. Dodman, second Mr. Paddon, third Mr. F. Jordan. For six Japanese, one variety, Mr. Edwards led with M. J. M. Pigny; second Mr. R. Jordan, with Avalanche; third Mr. Dodman, with Ralph Brocklebank. For six incurved, one variety, Mr. T. H. Cubbon was first with fine blooms of Lord Alcester; Mr. Edwards second with Golden Empress; and Mr. Dodman third. For twelve Anemone-flowered first Mr. Dodman, second Mr. Edwards, third Mr. Butcher, gardener to the Hon. Mrs. Joynes. Table plants were well shown.

With the exception of Grapes fruit was poorly shown, being very scarce in this neighbourhood. For six dishes, distinct, Mr. R. Jordan was first, Mr. G. Stening, Farncombe, being second. For six dishes of Apples, first Mr. R. Jordan, second Mr. T. Cubbon; ditto Pears, first Mr. W. Wiles, second Mr. R. Jordan. For two bunches of Muscats first Mr. R. Jordan, with fine bunches, good in berries and colour; second Mr. Bond. Ditto black, first Mr. Dodman, with fine sample of Alicante; second Mr. R. Jordan, third Mr. Bond. The exhibits of amateurs and cottagers showed a marked improvement on former years.

NOTTINGHAM.—NOVEMBER 13TH AND 14TH.

THE annual Show of Chrysanthemums and Fruit in connection with the Notts Horticultural and Botanical Society was held in the Arboretum Rooms on the dates named, when there was a brilliant display of the favourite autumnal flower; in fact, the most varied and excellent in quality that the members of the Society have yet produced. The specimens produced a most gorgeous effect. The groups as usual were the principal features and attracted a large share of attention. On Wednesday evening the Show was open to subscribers only, the general public having access on Thursday. Financially the Show was the most successful one the Society has yet held, and the able and efficient manner in which Mr. Edward Steward, the Secretary, carried out its arrangement is worthy of example.

The first prize for Chrysanthemums grouped with other foliage plants was awarded to the President of the Society, W. H. Farmer, Esq., for a somewhat heavy but otherwise very effective arrangement; J. Robinson, Esq., Nottingham (gardener, Mr. Plumb) being a close second with a bright and evenly balanced arrangement, but deficient in the main feature, a want of flowering Chrysanthemums. C. J. Cox, Esq., Rock House, Basford (gardener, Mr. Meadows) was a good third. So good were the groups that the Judges awarded an extra prize to James Booth, Esq. (gardener, Mr. Ralph). In the class for groups of plants arranged for effect in a space of 10 feet by 10 there was again keen competition, R. Halford, Esq., Nottingham (gardener, Mr. Taylor), securing chief honours with a very light arrangement, Cecos Weddelliana forming the centre and corners, with a groundwork of common wood moss. Mr. C. J. Cox came second with a pretty little group, and Mr. W. H. Farmer third.

In the class for twelve cut blooms (Japanese) P. L. Mills, Esq., Ruddington Hall, Nottingham (gardener, Mr. Hesford), obtained first place with really grand examples of Sunflower, Madame Audiguier,

Marguerite Marrouch, E. Molyneux, Moonlight, Baronne de Prailly, Belle Paule, J. Délaux, Madame Payne, Mr. Hillier, Val d'Andorre, and Avalanche. H. J. Pollock, Esq., Southwell (gardener, Mr. G. Dyke) was a good second, and Mr. C. J. Cox obtaining third. For six Japanese Mr. P. L. Mills was again first, Mr. C. J. Cox second, and Mr. G. Harriman, Lenton, Notts, third. In the class for twelve incurved varieties Mr. C. J. Cox obtained first, Queen of England, Lady Slade, and White Beverley being his best flowers. The same exhibitor was first for six blooms, Messrs. T. B. Hallam, Nottingham and Mr. A. Clark, Nottingham, being second and third respectively. In the classes for reflexed and Pompons only poor examples were staged, Mr. E. Massey, Nottingham, and Mr. J. Booth being the principal prizewinners.

In the class for six Chrysanthemum plants the competition was good, J. Hallam, Esq., Sherwood Rise, Nottingham (gardener, Mr. Newton), was first with well grown specimens, Mr. E. Massey and Mr. J. Robinson following. For three Chrysanthemum plants Messrs. J. Booth and J. W. Turner, Esq., Nottingham, obtained the chief places. Other classes for plants were fairly represented.

FRUIT.—The various classes for fruit were well filled. Prizes for Grapes were won by H. R. Clifton, Esq., Clifton Hall, Nottingham (gardener, Mr. Anderson); H. J. Pollock, Esq.; J. Hardy Carter, Esq., Sherwood; Mrs. Lennon, Sherwood. For dessert Apples by Mr. Clifton. For six varieties of dessert Pears by Mr. T. Bateman; Mr. J. W. Turner and Mr. T. B. Hallam third. For cooking Apples Mr. R. Halford, Mr. H. F. Pollock, and Mr. H. R. Clifton. The entries in the various classes for single dishes were very numerous and comprised splendid fruits of all the popular varieties.

Amongst those who exhibited fruit and vegetables not for competition were Messrs. Barber & Son, Nottingham; Messrs. Skinner and Rook, Nottingham; Messrs. J. R. Pearson & Sons, Chilwell; Messrs. Merryweather, Southwell; H. Frettingham, Beeston; Mr. J. Baker, Basford; Mr. W. Johnson, Arlockton, and Dr. Powell of the Coppice Asylum, Nottingham, the latter being awarded a special prize for a large and varied collection of vegetables.—J. H. W.

WALTON AND HERSHAM.

THE fifteenth annual Show of this flourishing Society was held in the new village hall, Hershams, on the 14th inst., and proved a success in every way. Her Grace the Duchess of Wellington kindly consented to open the Exhibition, and in a few well-chosen words Captain Terry, the Hon. Treasurer, said that financially the Society was in a better condition than had been the case for some years, and he hoped the Show would be held every third year at Hershams. The exhibits were more numerous than ever and of uniform good quality throughout. Mr. Masters, the Secretary, ably assisted by the Committee, arranged all the plants and blooms in a very pleasing way and everything passed off most agreeably.

Prize List.—Six plants dwarf trained. First, Mr. Reed, gardener to E. Pettit, Esq., Oatlands Park; second, Mr. Millican, gardener to H. Cobbett, Esq., Walton. Three plants.—First, Mr. Cawte, gardener to Preston Thomas, Esq., Weybridge; second, Mr. Felgate, gardener to Her Grace the Duchess of Wellington; third, Mr. Gardener, gardener to R. H. Turner, Esq., Walton. Standards were well represented, both large flowering and Pompons, by Messrs. Millican, Reed, and Gardener; and pyramids were beautifully shown by Messrs. Millican and Reed. Mr. Reed was placed first for four dwarf-trained Pompons, but some preferred Mr. Williams's second-prize plants, they being far fresher, although a trifle smaller.

Cut blooms, open class, twenty-four incurved and Japanese, twelve varieties of each. First, Mr. Carpenter, gardener to Major Collis Brown, Byfleet, with a splendid stand, the varieties being as follows, named as arranged:—Incurved.—Lord Alcester, Empress of India, Queen of England, Golden Empress, Princess of Wales, Alfred Salter, Golden Queen, Barbara, Nil Desperandum, Refulgens, Mabel Ward, and Mr. Brunlees. Japanese.—Duchess of Albany, Avalanche, Mr. Cannell, Boule d'Or, Fair Maid of Guernsey, Criterion, Madame J. Laing, Mdle. Lacroix, Sarah Owen, Stanstead White, Thunberg, and Madame Baco. Second, Mrs. Thorne, gardener to A. E. Flood, Esq., Walton, with a very beautiful stand, but not quite so heavy as the first. Third, Mr. Reeves, gardener to General Annesley, Oatlands Park, with a moderate collection. Twenty-four incurved.—First, Mr. Thorne, with a very even stand; second, Mr. Quarterman, gardener to C. E. Smith, Esq., Cobham; third, Mr. Millican. Twenty-four Japanese.—Mr. Quarterman was first with a very heavy stand; second, Mr. Thorne; third, Mr. Millican. Twelve incurved.—First, F. Hopkins, gardener to J. Widderspoon, Esq., Walton; second, Mr. Doyle, gardener to E. B. Alyward, Esq., Hershams; third, Mr. Felgate. Twelve Japanese.—First, F. Hopkins; second, Mr. Felgate; third, Mr. Cawte. In the first-prize lot was a Belle Paule, which the Judges considered the best example they had seen this season. Six incurved, one variety.—First, Mr. Thorne, with Empress of India, excellent; second, Mr. Reed; third, Mr. Quarterman. Six Japanese, one variety.—This was a strong class, there being eight entries. First, F. Hopkins, with Thunberg of a better colour than usually seen; second, Mr. Felgate; third, Mr. Thorne, with Stanstead White, which some thought better than Mr. Felgate's Boule d'Or. All the minor classes were well filled, and we were pleased to see amateurs and cottagers in stronger force than usual, and with very creditable produce.—F. H. W.

LINDFIELD.

THE fifth annual Show was held on November 14th and 15th. A fine display of groups, plants, and blooms was staged, and it was

generally admitted to be the most successful Show yet held. The classes for cut blooms were well contested, Mr. T. Venn, gardener to W. Studry, Esq., Paxhill, was first for eighteen incurved, staging Lord Alcester, Empress of India, Golden Empress, Queen of England, Barbara, Empress Eugénie, Lady Hardinge, Jardin des Plantes, Mrs. Heale. For eighteen Japanese Mr. R. Gibbins, gardener at The Châlet, was first with grand blooms of Avalanche, J. M. Pigny, Madame Audiguier, M. Freeman, &c.; Mr. T. Venn being second. In the class for twelve Japanese Mr. J. Voss, gardener to W. Savill, Esq., The Finches, was awarded first prize for good blooms of Ralph Brocklebank, Meg Merillies, Gloriosum, Carew Underwood, Duchess of Albany, Japonais, Fair Maid of Guernsey, Moonlight, Comtesse de Beauregarde, J. Laing, Jeanne Délaux, and M. Astorg. Mr. R. Gibbins took premier position for twelve incurved, showing Lord Alcester, Guernsey Nugget, Lady Hardinge, Jeanne d'Arc, Queen of England, Jardin des Plantes, Empress of India, Golden Empress, Empress Eugénie, Mrs. Heale, &c. He was also first for twelve reflexed and Anemone-flowered, staging King of Crimson, Cloth of Gold, Golden Peach, and Pink Christine, Fleur de Marie, Empress (large), and Madame Cabrol. There were ten groups staged, five large and five smaller, Mr. J. Hodges, gardener to M. C. Gibbons, Esq., Great Walstead, being awarded first prize for an artistic group in the larger class, and C. Wheeler first in the amateur class. There was also a class for the six best plants, each carrying six blooms, two each of either Japanese, incurved, reflexed, or Anemone-flowered. Some good specimens and standards were also shown. The show of fruit and vegetables was particularly good, and elicited the warm commendation of the Judges—Messrs. W. Balchin of Hassocks, J. Bunny of Dunny Gardens, Hurstpierpoint; and J. Hopkins, Highercross, Framfield.

HIGHGATE—14TH AND 15TH NOVEMBER.

THE fifth Exhibition of the Highgate, Finchley, and Hornsey Chrysanthemum Society took place at the Northfield Hall on the above dates, and notwithstanding a very thick fog during the whole of the first day, proved to be a decided success in every particular. It was remarkable for a grand display of well grown specimen plants. A challenge vase, value 21 guineas, for two specimens, one incurved and one Japanese, already won twice by Mr. J. Brooks, gardener to W. Reynolds, Esq., The Grove, Highgate, was again won by the same exhibitor, and this being the third occasion of his winning it, the vase now becomes his absolute property, in accordance with an agreement made with the donor. The incurved variety, Mr. George Glenn, was a splendid plant, and the Japanese variety Wm. Robinson was having about 170 good blooms. In the class for six specimen plants, Mr. Brooks was again first with grand plants, and Mr. Brittain, gardener to F. Reckett, Esq., J.P., Caen Wood Towers, a good second, the third prize being taken by Mr. Grundy, gardener to Horace Regnart, Esq., Highgate Lodge. Several good groups were set up, the two best being made to occupy a space not exceeding 66 feet. In this Mr. Brooks was again first, being very closely followed by Mr. Brittain, whose group would have been better had more time been spent in finishing it off.

In the open class for thirty-six blooms, eighteen incurved and eighteen Japanese, distinct, there was unfortunately only one competitor, Mr. B. Calvert, gardener to J. A. Houlton, Esq., Bishops Stortford, who was placed first, and would have been difficult to beat in good competition. Numerous classes for cut blooms, open to members only, were offered, the principal classes being as follows:—With twenty-four Japanese blooms, not less than eighteen varieties, Mr. Brittain was an easy first, having good examples of Mr. Garnar, Florence Percy, Duchess of Albany, Ed. Audiguier, Meg Merillies, Ralph Brocklebank, and E. Molyneux; Mr. Brooks second, and Mr. McLean, gardener to G. Kent, Esq., Southwood, third. In the class for twelve Japanese, distinct, Mr. Brittain was again first, having fresh and good blooms, Mr. Bushby, gardener to S. C. Thomas, Esq., Woodlands, Muswell Hill, second, Maiden's Blush and H. Cannell being particularly good. For twenty-four incurved blooms, Mr. Brittain was again placed in the premier position, having good blooms of Empress of India, Lord Alcester, John Salter, Barbara, Alfred Salter, and Mrs. Shipman; Mr. McLean was second, and Mr. Aitken, gardener to Goodhall, Esq., Highgate Road, third. In the class for twelve incurved blooms, Mr. Bushby was first, Mr. McLean second, and Mr. Brittain third. A class for six incurved, one variety, brought some grand blooms of Lord Alcester from Mr. Brittain, who was also awarded a certificate, Mr. Bushby being second. Several classes, open to single-handed gardeners only, were very creditably filled, the chief prizewinners being Messrs. Caryer, Türk, and Neary.

The class of most interest in the amateurs' division was for twelve Japanese blooms, in which the competition was very keen, the first prize being finally awarded to Mr. T. Press (Secretary), Victoria Cottages, Archway Road, very closely followed by Mr. D. B. Crane, 4, Woodview Terrace, Archway Road, who was beaten by one point only, the third prize being taken by Mr. Sears of Hornsey. In a tent adjoining the hall were placed table decorations, bouquets, sprays, &c., and also the cottagers' exhibits. In the class for table decorations, open to all members, Mr. T. Türk was first, Mr. D. B. Crane second, and Mr. Wilkinson third. In the amateur class for the same Mr. Crane was first; Mr. Murrey, Northwood Road, second; and Mr. J. Smith, Fitzroy Park, third. There was a marked increase in the attendance on each day as compared with last year, and the Committee hope to report shortly a considerable balance in hand.

DERBY.—NOVEMBER 15TH.

THE fifth annual Exhibition of Chrysanthemums was held at the Drill Hall on the above date, and I am informed was a financial success. The Hall was crowded at the time of my visit on the evening of the 16th, and I am told 1000 persons paid for admission on the opening day. In the principal open class for twenty-four blooms, twelve incurved and twelve Japanese, Mr. Goodacre, gardener to Lord Harrington, Elvaston Castle was easily first with substantial blooms. In Japanese a fine example of Stanstead White was noticeable. The prize was a handsome Derby china vase, value £10 10s., and 40s. in cash. This had to be won

In the division 1, open to the United Kingdom, class 1, for twenty-four incurved varieties, distinct, Mr. Brown, gardener to R. Henty, Esq., Langley House, Abbots Langley, was an excellent first with very good blooms. Class 2, twenty-four Japanese varieties, distinct, Mr. George Sturman, Queen Street, Watford, was an excellent first with flowers far above the average; Mr. Brown being second, and Mr. Kirby, gardener to E. Mawley, Esq., Berkhamstead, third. Mr. King, gardener to W. McFarlane, Esq., Glenchess, Rickmansworth, showed a splendid twenty-four Japanese, not for competition. Class 3, open to members only, miscellaneous groups of plants not exceeding 50 feet.—Mr. Lowe, gardener to the Right Hon. The Earl of Brownlow, the President of the



FIG. 59.—A GROUP OF ORCHIDS AT ALDIN GRANGE. (See page 464).

twice consecutively or three times altogether. In the members' classes the principal prize is the challenge cup, value £5 5s., and 20s. in cash, was well won by Mr. F. Bancroft, an enthusiastic amateur. He had in his collection the premier bloom, a good example of Avalanche in fine condition. Messrs. Pearson of Chilwell staged some fine fruit and three trained specimens of Chrysanthemums, which were much admired. The Committee hope to produce a still better Show next year by offering more liberal prizes.—VISITOR.

BERKHAMSTEAD.—NOVEMBER 15TH.

THE second annual Exhibition of the above Society was held in the Town Hall, Berkhamstead, on the date named, and was very successful.

Society, was an excellent first; Mr. Hillier, gardener to H. H. Cooper, Esq., Berkhamstead, second; and Mr. Smyther, gardener to Colonel Barclay, was third. Class 4, for groups of Chrysanthemums in a space of 40 feet.—Mr. A. B. Higgins, gardener to A. G. Lucas, Esq., was first with very even blooms. He was also awarded Messrs. Wood & Son's medal for the most meritorious exhibit grown with their liquid manure powder. Mr. Higgins was first for three specimens Japanese, also for a single specimen. Mr. Kirby was first for twenty-four Japanese, and Mr. Hicks, gardener to J. G. Pearson, Esq., for twelve incurved blooms. For twelve Japanese Mr. Folkes first. Mr. Elser won both Messrs. Carter's and Messrs. Cutbush's prizes. There was a capital exhibit of Orchids by G. Alcock, Esq., for which he was very highly commended. Messrs.

Lane & Son staged forty-one dishes of Apples, not for competition. The annual dinner of the Society took place in the evening at the King's Arms Hotel, Mr. F. Lane in the chair. Mr. Lane said he had great pleasure in informing those present that Lord Rothschild had given a subscription of £3 to the funds of the Society.

ECCLES, PATRICROFT, PENDLETON, AND DISTRICT.

NOVEMBER 15TH AND 16TH.

THE third annual Exhibition of Chrysanthemums was held in the Town Hall, Eccles, and it was in every respect a complete success. The exhibits were of unusual quality both in the open and amateur classes. Chrysanthemums in pots were well represented. Four groups were staged, and Mr. T. Belshaw, gardener to G. H. Leigh, Esq., being successful with a group; Mr. H. J. Bennett, gardener to N. A. Earle, Esq., second; and Mr. John Leech, gardener to John Brennand, Esq., third. With specimen plants Messrs. N. A. Earle, M. J. Macdonald (gardener to Marcus S. Bles, Esq.), and J. Barlow were the most successful, Mr. Earle taking several firsts. In the amateur class Mr. Th. Marlow and Mr. James Smethurst won the first prizes. Cut blooms were very numerous and of first-class quality. In the open class for twenty-four blooms, twelve incurved and twelve Japanese, Mr. T. Walker was first with a stand of splendid large and well-grown blooms; Mr. T. Cragg, gardener to A. Heine, Esq., being a good second. For twelve incurved blooms Mr. A. Heine was first, and Mr. T. Walker second. For twelve Japanese blooms the first prize was awarded to Mr. T. Walker, and the second to Mr. S. Goodall, gardener to A. H. Sykes, Esq. For six incurved and six Japanese Mr. T. Walker was again first, and Mr. A. Heine second. In the class for twelve cut blooms—comprising incurved, Japanese, reflexed, and Anemone-centred—Mr. T. Walker was again first, and Mr. A. Heine second. Mr. T. Walker also won the first prize for six Anemone-centred blooms. In the amateur class for one collection of eighteen cut blooms, staged for effect, Mr. H. Huber carried off the first prize, and Mr. Wm. Crawshaw the second. For twelve blooms, six incurved and six Japanese, Mr. Crawshaw was first, and Mr. W. Eckersley second; and for twelve cut blooms—viz., three incurved, three Japanese, three reflexed, and three Anemone-centred—Mr. Crawshaw was first, and Mr. H. Huber second. There were several smaller classes. There were also classes for the members of the Patricroft Linnæan Society, Mr. Smethurst carrying off the first prize for twelve cut blooms, six incurved and six Japanese. For six incurved blooms Mr. R. Johnson took the lead; same exhibitor was first for six blooms—two incurved, two Japanese, and two Anemone-centred. For six Japanese blooms Mr. T. Royles was first.

One of the most tastefully arranged groups of miscellaneous plants arranged for effect was shown by Mr. W. Elkin, gardener to Mrs. Th. Agnew, for which he was awarded the first prize. The same exhibitor won the first prize for six table plants. Orchids and other plants, for mention of which space cannot be found, added to the attractiveness of the Exhibition. Messrs. W. Clibran & Son, Altrincham, staged a few dozen cut Chrysanthemum blooms. For two new varieties—Annie Clibran (a sport from *Mdlle. Lacroix*) and *L'Automne*—first-class certificates were awarded by the Judges. Messrs. Dickson & Robinson, Manchester, made a good display of small Palms, table plants, and flowering plants. Mr. T. Derbyshire of Patricroft contributed twenty-four plates of Apples grown in his orchard at Barton. An excellent orchestral band was in attendance.

CUCKFIELD.—NOVEMBER 19TH AND 20TH.

THIS Society had their third annual Show at the Talbot Assembly Rooms, Cuckfield, on the above dates, and the display of plants, flowers, fruit, and vegetables was quite up to those of former occasions. The result in the open class competition for cut blooms shows that the older sister Society at Lindfield still maintain their superiority, for while they carry off the honours at Cuckfield, none of the growers from the latter place have invaded Lindfield territory. Both societies are, however, in need of larger places to hold their shows in, for the crowds of visitors in the evenings are so tightly packed as to preclude comfortable inspection and to endanger the safety of the exhibits.

The small amount of prizes given for groups do not seem to deter local men from entering the list. Only six could be staged in the room, and each space was filled, and though they varied in size and quality of bloom and arrangement, it must be said that they were all composed of suitable and well-grown plants. The first prize was worthily awarded to Mr. R. Fairbairn, gardener to Mrs. Lister, The Grange, Warrington; the second to Mr. G. Stringer, gardener to R. A. Bevan, Esq., Horrogate, their chief superiority being in size of blooms and vigour of foliage. Mr. T. First, gardener to F. M. Horth, Esq., Henmead Hall, was third, and Mr. J. Mitchell, gardener to Mrs. Maberly Mytens, fourth. This exhibitor had certainly the neatest and best finished group, and if he could put more vigour into his plants, and still keep them as dwarfs, he might reasonably expect a higher place. Specimen plants were not numerous, but well flowered, the chief winners being Messrs. T. First, J. Mitchell, and T. Burtenshaw. Primulas, Cyclamens, and Solanums were well shown.

Cut Flowers.—The chief interest was centred in the open class for twelve Japanese and twelve incurved. There was a good entry for the former, but a limited number for the latter. The coveted honour for twelve Japanese was awarded to Mr. J. Voss, gardener to W. Savill Esq., Finches, Lindfield, with a fine stand. They were—Back row, Meg Merrilies, Japonais, Ralph Brocklebank, and Duchess of Albany; second row, Baronne de Prailly, *Gloriosum*, J. Laing, and Mrs. Cannell; front

row, M. Astorg, Carew Underwood, Ceres, and Comtesse de Beauregard. Mr. R. Gibbins, gardener to W. Sturdy, Esq., The Chalet, Lindfield, was a good second, and had *Avalanche*, *Gloriosum*, and M. Freeman in good form. Mr. R. Baker, gardener to S. McClement-Hill, Esq., Wykeham, Burgess Hill, was third. For twelve incurved Mr. Gibbins had an easy victory with good blooms of—Back row, *Princess Imperial*, *Empress Eugénie*, *Queen of England*, and *Golden Empress*; middle row, *Princess of Teck*, *Golden Queen of England*, *Jeanne d'Arc*, and *Lady Hardinge*; front row, *Nil Desperandum*, *Guernsey Nugget*, *Barbara*, and Mrs. N. Davis. Mr. J. Lingley was second, and Mr. J. Manton third. In the corresponding local classes, Mr. R. Inglis, gardener to T. T. Cunliffe Lister, Esq., Borde Hill, was first for both Japanese and incurved, and Mr. T. Martin, gardener to A. S. Bicknell, Esq., Staplefield, was first for twelve reflexed. There was a good show of fruit, the chief exhibitors being Messrs. T. First, G. Stringer, J. Mitchell, R. Fairbairn, J. Lingley, J. Harding, R. Inglis, and J. Umpleby, several of whom also showed fine dishes of fruit not for competition. There was a keen contest for a tray of vegetables. Mr. W. Manton was again to the fore in this class, closely followed by Messrs. J. Mitchell, G. Stringer, and T. Burtenshaw in the order named. Much interest is taken in the progress of the Society by Major Maberley, the President, and no little credit is due to Mr. J. Umpleby, Superintendent, and to Mr. J. Tugwell, Secretary, for the success of their arrangements.

WATFORD.—NOVEMBER 19TH AND 20TH.

THE fourth annual Show of the above Society, held in the Watford Agricultural Hall on the above date, proved a great success. Too much cannot be said in its praise. The groups were magnificent, and the cut blooms, especially the Japanese, very fine and fresh. To give a detailed account would require much space, the classes being numerous and the entries plentiful. When we say seventeen groups of Chrysanthemum plants, three of miscellaneous plants, and the same number of Pelargoniums were in competition, and eight others, some of large dimensions, non-competitive, the extent of the Exhibition may be imagined. The arrangement throughout was perfect, and viewed from the gallery had a grand effect.

Groups.—In the open class for a group of Chrysanthemums not exceeding 50 square feet, Mr. Deane, gardener to the Earl of Essex, Cassiobury, Watford, was a good first with a fresh lot of plants, well arranged, and carrying large flowers, the best group in the Show. Mr. Davis, gardener to E. A. Woolley, Esq., Abbots Langley, second. Mr. Cox, gardener to J. Trotter, Esq., Hertford, third. For a similar sized group, competition confined to members only, Mr. Ashdown, gardener to C. R. Humbert, Esq., Watford, first. Second, Mr. Wilson, gardener to G. Rooper, Esq., Nascott House, among several competitors. For miscellaneous plants Mr. Brown, gardener to Lord Esher, Heath Farm, Watford, secured the first position with a nicely arranged group, consisting of Palms, highly coloured Crotons and *Dracænas*, flowering plants, groundwork of *Adiantums*. Second, Mr. Seabright, Stanmore; third, Mr. Condie.

Specimen plants made a good display. For three incurved Mr. Beckett was first with large plants of Mrs. Dixon, Lord Wolseley, and Mrs. G. Rundle. Second, Mr. Wilson; third, Mr. Layzell, gardener to the Rev. K. F. Gibbs. Mr. Beckett was the only exhibitor of three Japanese, having beautiful plants of *Henri Jacotot*, *Mdlle. Lacroix*, and *Wm. Robinson*.

Cut blooms, open classes.—Much interest was evinced here, especially in the Japanese classes, where the competition was generally keener than with the incurved flowers. For twenty-four Japanese, distinct, Mr. Beckett was well first, having blooms of great depth and breadth, completely covering the stands. They comprised—Back row: *Etoile de Lyon*, *Jeanne Delaux*, *Boule d'Or*, *Lady Lawrence* (very good), *Baronne de Prailly*, *Sunflower*, *E. Molyneux*, *Stanstead White*; middle row: *Gloriosum*, *Volunteer* (very pretty), *Madame Baco*, *Le Sceptre Toulouse*, *Ralph Brocklebank*, *Madame C. Audiguier*, *Avalanche*, *Carew Underwood*; front row: *H. Elliott*, *Thunberg*, *M. Brunet*, *Pelican*, *Marsa Japonais*, *Mrs. Mahood*, and *Marguerite Marrouch*. Second, Mr. Cox; Mr. G. Sturman, a Watford amateur, being a good third. Mr. Beckett was also the most successful competitor for twenty-four incurved, distinct, having good flowers of *Queen of England*, *John Salter*, *Golden Empress*, *Prince Alfred*, *Alfred Salter*, *Lord Alcester*, *Violet Tomlin*, *Empress of India*, back row; *Charles Gibson*, *Princess Teck*, *Mr. Brunlees*, *Beauty*, *Mrs. W. Shipman*, *Hero of S. Newington*, *Princess of Wales*, *Jardin des Plantes*, middle row; *Lord Wolseley*, *Refulgens*, *Angolina*, *Mrs. N. Davis*, *Lady Hardinge*, *Miss M. Haggas*, *Barbara*, and *Mrs. Hcale*, front row. Second, Mr. Brown, gardener to R. Henty Esq., Abbots Langley. Twelve Japanese.—First, Mr. Deane, having among others very fine blooms of *G. Daniels*, *Mr. H. Cannell*, and *Lady Lawrence*. Second, Mr. Tidy, gardener to W. D'Arcy, Esq., Stanmore, the latter being first for twelve incurved, and Mr. Rumbold, gardener to G. Lake, Esq., second. The six Japanese, one variety class, was strongly contested, Mr. Deane coming first with wonderful flowers of *Etoile de Lyon* of immense size, fresh, and of a deep purplish pink colour. Second, Mr. Beckett, also with beautiful flowers of *Lady Lawrence*.

In the second division, open only to members of the Society, Mr. Beckett was again successful in securing the first prizes for twenty-four incurved, and also for the same number of Japanese, the flowers being very similar to those mentioned in the open classes. Among the latter the new variety *Volunteer* was again staged; the colour is a pleasing peach pink and quite distinct, with florets of the *Belle Paule* type. Mr. Rumbold was second in Japanese, and Mr. Brown, Abbots Langley, for

incurred. For twelve incurred, Mr. Mundell, gardener to Lord Ebury, Moor Park, was first, having, among others, good flowers of Violet Tomlin and Princess Teck. Some good stands of reflexed blooms were staged by Mr. Brown and Mr. Mundell, who took the prizes in that order, and Pompons and Anemone Pompons were well shown by several exhibitors. In many other classes amateurs and single-handed gardeners exhibited strongly, the principal prizewinners being Messrs. Lansley, Sturman, Vincent, Chipps, Camfield, Smith and Browton.

Fruit and vegetables, especially the latter, were staged in large quantities, the quality being excellent, and filled one side of the large gallery. In the open class for twelve kinds Mr. Beckett added another to his many successes. Mr. Brown second. Many other classes were devoted to vegetables, the prizes offered by Messrs. Sutton & Sons, G. P. Darby, and several others. Messrs. Wattam, Beckett, Brown, and Anning won the chief prizes in the Grape classes. Table decorations, bouquets, &c., also formed an interesting feature in the Show.

Not for Competition.—The chief attraction was a large group of Chrysanthemums and miscellaneous plants arranged in the centre of the hall by Mr. Myers, gardener to the Earl of Clarendon, President of the Society. The tall Palms were an agreeable relief to the different groups of colour surrounding, and was altogether an admirably arranged group of excellent plants. Mr. Smith, gardener to E. H. Lloyd, Esq., Langleybury, also puts up an effective group, on which Orchids and Chrysanthemums figured largely. Collections of plants were also contributed by Messrs. Cutbush & Son, Messrs. G. P. Darby, Nicholson, Pinkerton, and some others. Messrs. Lane & Son, Berkhamstead, staged a collection of Apples, among which were some highly coloured and fine examples.

LIVERPOOL.—NOV. 19TH AND 20TH.

THIS Exhibition was a great success. The incurred blooms of Chrysanthemums were very little in advance of those last year, but the Japanese were fresh, large, and superior.

Cut Blooms.—In the open class for forty-eight blooms, twenty-four Japanese and twenty-four incurred, six collections were staged. Mr. R. Foster, gardener to S. H. Thompson, Esq., Thingwall Hall, Broadgreen, was deservedly placed first. The following comprised the varieties:—Japanese, back row: Boule d'Or, Sarah Owen, E. Molyneux, R. Brocklebank, M. Marrouch, Meg Merrilies, M. Bernard, and Boule d'Or. Second row: Madame Audiguier, Madame J. M. Pigny, Madame Baco, Mdle. Lacroix, M. Brunet, Pelican, and M. J. Laing. Front row: Avalanche (very good), M. Bernard, R. Brocklebank, Jeanne Délaux, Meg Merrilies, Belle Paule, Criterion, and Avalanche. Incurred, back row: Lord Alcester (2), Emily Dale (2), Empress of India (2), Queen of England, and Golden Empress. Second row: Queen of England, Golden Empress, Princess of Wales, Mrs. Shipman, Mrs. Heale, Alfred Salter, Princess Teck, and Jeanne d'Arc. Front row: Mrs. Norman Davis, Princess Teck, Barbara, Jardin des Plantes, Charles Gibson, Miss Haggas, Cherub, Hero of Stoke Newington. Second, Mr. John Edwards, gardener to H. Tate, Esq., Allerton Beeches, with fresh good blooms, the Japanese particularly fine. Third, Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree. For eighteen blooms, incurred, Mr. Geo. Eaton, gardener to W. H. Shirley, Esq., Allerton House, was placed first with bright examples. Back row: Emily Dale, Princess of Wales, Miss M. A. Haggas, Princess of Teck, Jardin des Plantes, and Queen of England. Middle row: John Salter, Mrs. Heale, Hero of Stoke Newington, Cherub, Empress Eugénie, and Golden Empress of India. Front row: Lady Hardinge, Mr. Bunn, Nil Desperandum, Mr. Cullingford, Barbara, and Lady Carey. Second, Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Woolton. Third, Mr. Thos. Foster, gardener to J. Brancker, Esq. Four collections were staged. With twelve blooms Mr. W. Wilson, gardener to H. Cunningham, Esq., Gorsey Cop, Gateacre, took the lead, followed by Mr. J. Brantingham, gardener to W. Radcliffe, Esq., Aigburth, and Mr. J. Warrington, gardener to T. Bright, Esq., Brierley, Aigburth. Five collections were staged. In the corresponding class for twelve Mr. J. Hathaway, gardener to the Earl of Latham, Latham House, Ormskirk, took the lead, followed by Mr. G. Buttler, gardener to J. Drysdale, Esq., Mossley Hill, and Mr. G. Lyon, gardener to J. H. Kenion, Esq., Rock Ferry, in the order named. Three stands were staged. For eighteen Japanese, six or seven were in competition. Mr. John Gould, gardener to R. N. Dale, Esq., Bromborough Hall, Birkenhead, was successful. Mr. J. Brantingham was placed second, and Mr. Thos. Foster third. Of twelve blooms seven or eight boxes were staged. Mr. J. Jellico was placed first with large fresh blooms. Second, Mr. J. Brantingham, and third Mr. Thos. Foster. In the corresponding class for twelve Mr. G. Butler took the lead, followed by Mr. Hathaway and Mr. A. R. Cox. For six Anemone flowered Mr. W. Wilson took the lead with large fresh flowers, and he also won with six reflexed. For twelve Pompons Mr. D. McKellar, gardener to A. J. Steel, Esq., Bank Hill Road, Aigburth, took the lead with capital flowers.

Chrysanthemums in Pots.—These were equal to the average of past years, and the groups showed a marked improvement. For a group of plants, Mr. H. Stone, gardener to R. Bennett, Esq., Weston House, Halewood, was first with well bloomed plants. For six untrained plants, Mr. Thomas Gowen, Mossley Hill, was placed first; Mr. W. Quirk, second; and Mr. S. McKellar third. With four trained large flowering plants Mr. Jos. Harrison, gardener to W. G. Bateson, Esq., led, having fresh well-grown examples. Mr. J. Hughes was a good second, and Mr. J. Rose, gardener to G. H. Parker, Esq., third.

Stove and Greenhouse Plants.—These were fewer than usual, Mr. A.

R. Cox being placed first for six plants, Mr. Jellico second, and Mr. A. Lewis third. Ferns were equal in numbers and quality to what have been staged in past years. Mr. Thos. Gowan won, Mr. A. R. Cox being a good second. Orchids were not numerous, but in quality they were in advance of any staged during the past few years. For three plants, Mr. A. Smith, gardener to D. de Zharronda, Esq., was placed first with *Lycaste Skinneri alba*, three expanded flowers; *Vanda Sanderiana* one spike, and *Cymbidium Mastersi*. Mr. B. Cromwell was second. With one *Cypripedium* Mr. Healey, gardener to Col. Wilson, won, having a fine plant of *Spicerianum* with fifteen flowers. Roman Hyacinths were exceedingly well staged by Mr. J. Kelly, gardener to R. Singlehurst, Esq., Aigburth.

Fruit.—There was a great falling off in the collections and some of the Grape classes, while the hardy fruit was equal, if not superior, to that staged in previous years. In the class for six dishes there were only two entries. First, Mr. J. Bounds, gardener to A. L. Jones, Esq., Oaklands, Aigburth, Grapes poor, Pears and Apples good. Second, Mr. W. Hannagan, gardener to R. C. Naylor, Esq., Horton Hall. For two Pines Mr. W. Kipps, gardener to J. Crosfield, Esq., Walton Lea, Warrington, was deservedly placed first with splendid fruits of Smooth Cayenne. Of two bunches of black Grapes, Alicantes, there were five collections staged, Mr. J. Downham, gardener to E. H. Harrison, Esq., Eastham, winning with good bunches. Second, T. Ferguson, gardener to Mrs. Patterson, Rock Ferry. Third, Mr. R. Brownbill, gardener to G. Fowler, Esq., Ravenwood, Rock Ferry. With two bunches of any other variety of black Mr. T. Ferguson took the lead with good bunches of Gros Guillaume. For two bunches of Muscat of Alexandria Mr. G. Middleton, gardener to Richard Pilkington, Esq., Rainford Hall, St. Helens, was placed first with splendidly finished examples. Second, Mr. W. Speed, very good. Third, Mr. W. Oldham, gardener to J. Beecham, Esq., Huyton. Extra prize, Mr. W. T. Wyton, gardener to Major Bird, Crookhey Hall, Garstang. For two bunches any other white only two exhibits were staged, Mr. J. Downham being first with Trebbiano, large highly coloured bunches. Second, Mr. S. McMaster, gardener to Sir U. Kay Shuttleworth, Bart., M.P., Gawthorpe Hall, Padiham. In the class for four bunches of Grapes Mr. W. Oldham was first with Lady Downe's, Muscat of Alexandria, Alicante, and Golden Queen, good. Second, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby. Third, Mr. G. Middleton. Five lots were staged.

Pears were good. Five collections were staged for the prizes offered for six dishes, Mr. J. Goodacre taking the lead; second, Rev. L. Garnett, Christleton Rectory, Chester; third, Mr. H. Forder, gardener to Col. Cornwallis West, M.P. Of four dishes eight collections were staged, the prizewinners being Mr. R. Pennington, gardener to E. Banner, Esq., Blacklow House, Roby; Mr. O. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall; and Mr. J. Kelly, gardener to R. Singlehurst, Esq., Endfield House, Aigburth. Mr. Hannagan was first with one dish, showing Marie Louise; second, Rev. L. Garnett, with Doyenné du Comice; third, Mr. R. Foster, with Marie Louise. For one dish stewing Pears, Mr. M. Quick, gardener to W. Polter, Esq., Thingwall Hall, Birkenhead, was first with Black Worcester; Mr. J. Rimmer second, and Mr. H. Foster third.

Apples were good, and the prizes offered were in each class well contested for. In the class for six dishes seven collections were staged. Rev. L. Garnett took the lead with Blenheim Pippin, Winter Peach, Ribston Pippin, Golden Winter Pearmain, Cox's Orange Pippin, and Melon Apple, all very fine. Second, Mr. J. Davies, gardener to the Rev. H. C. Sturges, Bodenham, Leominster. Third, Mr. H. Forder. For three dishes Mr. R. Pilkington took the lead, followed by Mr. W. Hannagan and Mr. W. Quick in the order named. There was no name to the first exhibit of one dish, Mr. B. Cromwell, gardener to T. Sutton Tinnies, Esq., being second, and the Rev. L. Garnett third. For eight dishes culinary Apples Mr. J. Davies took the lead with splendid examples of Peasgood's Nonesuch, Stirling Castle, Golden Noble, Emperor Alexander, Blenheim Pippin, Winter Nonesuch, and Warner's King. Mr. John Hyde second, and Mr. J. Goodacre third. Seven collections were staged. For four dishes Mr. R. Pennington took the lead, followed by Messrs. Hannagan and J. Rimmer. Mr. W. Davies was first with one dish, showing Stirling Castle very large.

Miscellaneous exhibits were numerous. Messrs. R. P. Ker & Sons staged *Cyclamens* in their well-known style; the Liverpool Horticultural Co. a mixed collection of plants; Messrs. Dickson, Limited, Chester, a collection of Apples; Messrs. Turner Bros. a collection of wreaths and bouquets; Messrs. Fishlock Bros. a similar exhibit, some of the sprays being particularly handsome; Mr. J. V. Smith a seedling *Croton* named Mrs. Ussher; and Mr. J. Watkins, Pomona Nurseries, Hereford, a collection of Apples. For these certificates of merit were granted. The Exhibition was admirably arranged.

WINCHESTER.—NOVEMBER 19TH AND 20TH.

THIS Society held their seventh Exhibition on the above dates. Cut blooms formed the leading part of the Show, the leading class being that for forty-eight, twenty-four to be incurred or reflexed, and the same number Japanese. The first prize was well won by F. W. Flight, Esq., Twyford, Winchester (Mr. Neville, gardener) with a wonderfully fresh even lot of Japanese, but a few of his incurred lacked freshness. The varieties were:—Japanese: *Etoile de Lyon* (2), Mr. Ralph Brocklebank (2), Meg Merrilies (2), *Baronne de Prailly* (2), *Carew Underwood* (2), *Lady Lawrence* (2), Mr. H. Wellam, Mrs. Cannell, *Gloriosum*, *Golden Dragon*, *Avalanche*, *Criterion*, Mrs.

Wheeler, Mrs. J. Wright, E. Molyneux, Souvenir de Angélé Amiel, Comte de Germiny and Mr. Cannell. Incurred: Empress of India, Queen of England (2), Miss M. A. Haggas (2), Lord Alcester (2), Princess of Teck (2), grand; Golden Empress, Putney George, Lady Dorothy (2), good; Beauty (2), Peach Christine. Hero of Stoke Newington, Mr. Brunlees, Mrs. N. Davis, John Salter, Nonpareil, Cherub, and C. Gibson. Messrs. W. & G. Drover second with blooms as large, but lacked freshness all through.

Another important class was that for twenty-four blooms in eighteen varieties, the best coming from Sir H. Mildmay, Bart., Dogmersfield Park (gardener, Mr. G. Trinder), with heavy lot bright and fresh blooms; second, Mr. Wills. For twelve incurved, distinct, Messrs. W. & G. Drover secured the chief position with well-finished blooms; second, Mr. W. Neville. For twelve Japanese, distinct, Mr. W. Neville gained first honours with a bright, fresh, and well arranged stand, similar to his forty-eight lot, Messrs. W. & G. Drover being second. In the class for twelve Anemones, not less than eight varieties, Messrs. W. and G. Drover had a magnificent stand, the varieties being Souvenir de Lardenne (2), Mdle. Cabrol (2) good; Lady Margaret (2), Miss Annie Lowe, W. & G. Drover (2), Laing's Anemone, Marguerite Villageoise, and Nouvelle Alvéole. Mr. W. Neville second.

In the class for twelve reflexed Mr. Wills was first with medium sized blooms; second, Mr. Neville. Mr. Bushby, gardener to F. Willan, Esq., Hill Park, Bitterne, took first honours with six incurved and six Japanese, distinct, and also for twelve blooms, not less than eight varieties. In this stand a bloom of Mrs. H. Cannell was grand, measuring 10 inches in diameter. Pompons was best shown by Mr. Neville, having a new one called Bessie Flight, a sport from Madame Montels, which the Judges awarded a first-class certificate. Colour similar to Queen of Anemones.

The best group of plants was arranged by Mr. A. Prouting, gardener to Miss Butler, Winchester, and the best specimen plants, very good indeed, were exhibited by Mr. F. Wakeford, gardener to G. Harris, Esq., Aldermore, Shirley. We are pleased to hear that the Show was better attended than any others of recent years.

YORK.—NOVEMBER 20TH.

THE annual Exhibition of the ancient Society of York Florists was held in the Fine Art Exhibition Buildings, which is admirably adapted for the purpose, as an effective display of groups and plants was easily obtained, those of a miscellaneous character being arranged in circular form in the centre of the hall at wide distances apart, thus allowing ample space for promenading. The specimen plants of Chrysanthemums were placed in blocks on the floor of the hall, while many adorned the sides.

For a group of Chrysanthemums interspersed with foliage plants arranged for effect in a space of 120 square feet, a special prize—a silver cup—to accompany a cash prize was offered, which brought four competitors. Mr. McIntosh, gardener to J. T. Hingston, Esq., Clifton, York, easily secured first honours with a free arrangement of well-grown plants carrying blooms, the whole neatly margined with foliage plants. Mr. Kendall, gardener to J. M. Waddell, Esq., Selby, was second, the flowers in this group not being nearly so good as in the first prize lot. For a group of Chrysanthemums in a space of 80 square feet four competed, making in all a good display. Mr. Everard, gardener to Mrs. Gutch, York, won by the freshness of his blooms and the better arrangement. There was brisk competition in the class for four incurved distinct varieties. Mr. Everard won easily with rather tall but capitally flowered and neatly trained specimens of Prince Alfred, John Salter, and Jardin des Plantes. Mr. J. Smith, Beverley, was second with smaller yet capital plants. Mr. Everard secured the award for a specimen incurved, with Mrs. Dixon in good condition, carrying upwards of one hundred blooms.

The principal cut bloom class was that for twenty-four incurved, not less than eighteen varieties, and twenty-four Japanese, also in eighteen varieties. The handsome sum of £15 was given for the first prize, which brought five competitors, making in all a good display. Mr. Anderson, gardener to A. Milnthorpe, Esq., Cattal, York, was awarded first honours for a capital stand of Japanese blooms and large incurved, but the latter were getting old. The varieties were—Incurved—Back row: Queen of England (2), Lord Wolseley (2), Alfred Salter (2), Lord Alcester and Empress of India. Middle row: Lord Alcester, Pink Venus, White Venus, Nil Desperandum (2), John Salter, Mrs. Heale and Golden Empress. Front row: John Salter, Barbara, Cherub, Mr. Brunlees, Beauty, Sir S. Carey, Miss M. A. Haggas and Violet Tomlin. Japanese—Back row: Source d'Or (2), Meg Merrilies (2), Le Spectre Toulousain (2), Ralph Brocklebank (2), Mdme. C. Audiguier. Middle row: Fernand Feral, Comte de Germiny, Mrs. J. Wright, Edwin Molyneux, Avalanche (2), Comtesse de Beauregard Fair Maid of Guernsey, Val d'Andorre (2). Front row: Duchess of Albany, Mdle. Lacroix, Madame J. Laing, Martha Harding, Belle Paule. Mr. T. Caring, gardener to Mrs. Cope, Dove Park, Woolton, Liverpool, was a close second, losing by only two points, his incurved blooms, though smaller, possessing more finish, but the Japanese were not so large as those in the first prize stand. Mr. Coultas, gardener to W. Hardinge, Esq., Holly Hurst, Darlington, was third. Four competed in the class for twenty-four varieties, half to be incurved and the remainder Japanese. Mr. J. Smith, Norwood, took leading honours with even good stands of both kinds. Mr. Dickinson, gardener to W. B. Richardson, Esq., Elm Bunk, York, following with neat blooms. Mr. T. Smith, Norwood, Beverley, took leading honours for twelve incurved varieties, as he also did for six reflexed with medium size fresh examples.

Mr. W. Boston, Carthorpe, Bedale, with twelve Japanese, led the way with fresh medium-sized examples of leading varieties. For six Japanese, one variety, there was a brisk contest, and with well grown examples of Boule d'Or Mr. Anderson led the way amongst seven competitors; Mr. Dickinson was second with Ralph Brocklebank. Baskets of Chrysanthemums were numerous, as also were bouquets both of Chrysanthemums and miscellaneous flowers.

Fruit was not so abundant as on some previous occasions, but of capital quality. For six bunches of Grapes in three varieties there were five competitors. Mr. McIntosh, gardener to J. T. Hingston, Esq., York, took leading position with Gros Colman, capital in every respect, large in berry and of excellent colour; Alicante in a similar condition. Two splendid bunches of Trebbiano completed this collection. Mr. Dickinson took second honours, also staging well. For two bunches of white Grapes Mr. Hare, gardener to R. H. C. Neville, Esq., York, was well ahead with Muscat of Alexandria. For the same number of any black variety Mr. W. Jenkins, Aldin Grange Gardens, was an easy first among five others with magnificent examples of Gros Colman, having enormously large berries, well finished.

Vegetables were extremely abundant, and of good quality. Messrs. Backhouse & Son staged eighty dishes of Apples of the leading varieties in good condition, these being entered not for competition. The Exhibition reflected the utmost credit upon the energetic and courteous Secretary, Mr. J. Lazenby.

RUGBY.—NOV. 20TH AND 21ST.

THOUGH a comparatively young Society, that established in Rugby is giving substantial proof of its usefulness in improving the culture of Chrysanthemums in the district, and in developing a love of horticulture amongst amateurs. It fully deserves the strongest local support, as the funds are most judiciously expended, a comprehensive schedule is prepared, and the affairs of the Society are conducted by a practical Committee. The Chairman, Mr. L. Cumming, the Treasurer, the Rev. W. O. Wait, and the Secretary, Mr. W. Bryant, all work assiduously in advancing the Society's interests, Mr. Bryant, with some energetic members of the Committee, performing most useful service. The dates of this year's Show were unfortunately the same as those chosen for the Birmingham Exhibition, and this, in connection with the bad season, might have been expected to seriously affect it in the number of exhibits. With the exception, however, of one or two cut bloom classes there was no reduction of entries, and in some cases a very satisfactory increase was noticeable. Groups and plants were unusually numerous and good, the lower portion of the Town Hall being filled with exhibits. Miscellaneous plants, particularly Primulas and Cyclamens, were also well represented. The cut blooms, too, though not quite so abundant as at some previous shows, were fairly fresh and even throughout.

The principal class for cut blooms was for thirty-six (eighteen incurved and eighteen Japanese, distinct), a silver cup and £2 constituting the first prize, which was secured by Mr. W. Comfort, gardener to G. A. Everitt, Esq., Knowle Hall, Birmingham. The incurved were of medium size, but solid and neat, the varieties being in the back row: Golden Empress of India, Queen of England, Lord Alcester, Hero of Stoke Newington, Golden Queen of England, and Alfred Salter. Middle row: Jeanne d'Arc, Prince Alfred, Mrs. N. Davis, Miss M. A. Haggas, Princess of Teck, and Barbara. Front row: Violet Tomlin, Lord Eversley, Nil Desperandum, Cherub, Princess Beatrice, and Eve. The Japanese were fresh and bright, comprising in the back row: Boule d'Or, Comtesse de Beauregard, Gloriosum, Baronne de Prailly, Carew Underwood, and Meg Merrilies. Middle row: Madame C. Audiguier, Mdle. Lacroix, Madame J. Laing, Fair Maid of Guernsey, Sunflower, and La Triomphante. Front row: Mdle. Pigny, J. Délaux, Sarah Owen, Madame Baco, Mrs. J. Wright, and Thunberg. The second place was taken by Mr. W. Dillby, gardener to W. H. May, Esq., Bowden House, Market Harborough, who had small incurved, but good Japanese. The two competitors above named were placed in the same positions for twelve incurved, followed closely by Mr. J. Parker, Rugby. Mr. Comfort was in fact the most successful in the open classes, for he was first with twelve blooms (six reflexed and six Anemones); also with twelve Japanese and single blooms of incurved and Japanese, Empress of India and Meg Merrilies securing the last named honours, Mr. Parker following in some of the classes. A special prize was offered in a Rugby district class for twelve blooms, six incurved and six Japanese, distinct, which was adjudged to Mr. A. J. Kilbourn, Bilton Hall Gardens, who staged excellent specimens in both sections. The Rev. F. D. Morrice, Hillmorton Road, took the second place; Mr. Batchelor being third. Messrs. Kilbourn and Batchelor were also the prizetakers with twelve incurved in the order named. Classes were also provided for cottagers and amateurs, in which the competition was very good, and the exhibits in several cases of good quality. Bouquets were admirably shown by Messrs. Perkins & Son of Coventry, Mr. Parker also exhibiting well in the same class; while in another Mr. Arnsby and Mr. Batchelor secured the chief awards. Messrs. Perkins & Son also had a very tasteful basket of Chrysanthemums, being again followed by Mr. J. Parker.

Groups of Chrysanthemums occupied considerable space on the ground floor of the Town Hall, the chief class being that for a group arranged in a space of 60 square feet, and open to all exhibitors. Mr. J. Parker won the first place easily with a very tasteful arrangement, the plants dwarf in front, the blooms good and varied, and the whole most satisfactory. Mr. Kilbourn was second, his plants having fine blooms, and brightly coloured varieties being freely employed it was

very effective. Mr. Andrews had the third place, his blooms being somewhat small, but general style was good. In the district class for a group in a similar space the Rev. E. P. Morrice led with a most effective, bright, and handsome group, the plants dwarf. The Rev. D. Percival also exhibited well in this class. The Chrysanthemum plant classes brought numerous exhibits from Messrs. Newman, Tunnard, Killbourn, Parker, Batchelor, Oldham, and Daniels. In the single trained specimen class Mr. J. Newman, gardener to Mrs. Morgan Molesworthy, The Hollies, Bilton Road, showing Guernsey Nugget, a fresh, evenly trained, healthy, and well flowered plant. Mr. Andrews was second, also with a good specimen.

Primulas from Messrs. Batchelor, Parker, Daniels, Barber, Arnsby, and the Rev. Payne Smith were good. Apples and Pears and Grapes were shown in small numbers but of fairly good quality, Messrs. Comfort, Hancox, Parker, and Bottrill taking the chief prizes. Vegetables were excellent, and in close competition Messrs. Hancox, Batchelor, Howes, Hall, Arnsby, and Morris and Daniels won the leading prizes.

Noticeable amongst the non-competing exhibits was an extensive group of Chrysanthemums and foliage plants arranged at one end of the upper hall by Mr. J. Parker, which was very highly commended.

BRISTOL.—NOVEMBER 20TH AND 21ST.

THIS, for a southern Show, was a decided late fixture, but the entries were nearly as numerous as usual, while the quality of the exhibits, with one or two exceptions, was fully up to the average. The Show was well arranged by Mr. Wilfrid Jones, the Secretary, and his practical assistants.

Trained Chrysanthemums were scarcely so good as they have been seen at former shows, but were highly creditable. The best six specimens of large flowering varieties were staged by Mr. J. Lee, gardener to T. M. Miller, Esq., who had Mrs. Forsyth, Mrs. Dixon, Barbara, Mrs. G. Rundle, Christine, and Guernsey Nugget in excellent condition. Mr. H. Hanking, gardener to J. Leech, Esq., was a good second, and Mr. G. Silcock, gardener to W. Vowles, Esq., third. Mr. Lee was also well first for six Japanese varieties, these consisting of Souvenir de Haarlem, Irene, Fair Maid of Guernsey, Bertier Rendatler, Janira, and Source d'Or. Messrs. Hanking and Silcock were respectively second and third, both having several fresh creditable specimens of popular varieties. The three best standard trained plants were shown by Mr. Hanking; Mr. W. H. Bannister, gardener to H. St. V. Ames, Esq., being a fairly good second. Plants in 8-inch pots were well shown, the majority of them having good foliage and perfect flowers. Mr. Hanking was first, Dr. R. A. Ross second, and Mr. G. Silcock third. There were two classes provided for groups of Chrysanthemums, and the competition was keen. With the largest, or those to occupy a space 12 feet by 7 feet, Mr. A. Parkes, gardener to Thomas Owen, Esq., was well first, many fine blooms being shown in his group. Mr. W. Marshall, gardener to James Dole, Esq., was a good second; and Mr. T. Arwell, gardener to T. B. Bran, Esq., third. Mr. E. T. Hill was rightly awarded a first prize for a smaller group. Numerous classes were provided for miscellaneous plants, in most of which the competition was close and good. The first prize for a group to occupy a space 10 feet by 5 feet was well won by Mr. J. Ayres, gardener to T. W. Gibson, Esq., who had a bright pleasing arrangement. Mr. J. Aswell was second, and Mr. Hancock, gardener to A. W. Summers, Esq., third. The principal prizewinners in the other plant classes were Messrs. Lee, Hancox, Shelton, gardener to W. R. Wait, Esq.; Bannister, Aswell, R. Cripps, G. White, G. Harris, and A. Parkes.

Ten classes were provided for cut blooms, in each of which, in spite of the comparative lowness of the prizes offered, the competition was very keen, several quite new exhibitors coming to the front with exhibits that would have gained prizes at earlier shows. The first prize, a silver cup, value three guineas, offered for twenty-four large-flowered Chrysanthemums in not less than eighteen distinct varieties, was awarded to Mr. C. Cooper, gardener to C. L. Collard, Esq., Taunton, his stands containing excellent blooms of the leading varieties. Mr. A. Parkes was second, and Mr. J. Applin, gardener to W. M. Baker, Esq., third, both having many perfect blooms. Mr. Cooper was also first for twelve incurved varieties, these consisting of Mrs. Norman Davis, Empress of India, A. Salter, Empress Eugénie, Golden Empress, Princess of Teck, Mr. Howe, Barbara, Jeanne d'Arc, Princess of Wales, and Jardin des Plantes, all fresh and good. Mr. A. Parkes was again a close second, and Mr. J. Applin third. Japanese varieties were most extensively shown, several excellent stands not gaining a prize. With twenty-four blooms in not less than eighteen varieties, Mr. Cooper again came in first with blooms in fine condition. Mr. J. Applin was a close second, and Mr. John Austin third. With twelve varieties Mr. Applin was first, his generally excellent exhibit including good blooms of Gladiator, Mrs. A. Harris, Mr. Thomson, Mr. H. Cannell, and Mad. Baco. Mr. Cooper was second, and Mr. Runnales, gardener to C. Thurburn Esq., third. Mr. Parkes staged remarkably good blooms of Empress of India, Lord Alcester, and Lord Wolseley in the class provided for these varieties, and was first, Mr. W. Carpenter, gardener to A. Cole, Esq., being second. Several exhibitors misread the schedule, staging one only of the three varieties named, the same thing occurring in the class provided for two blooms each of E. Molyneux, Carew Underwood, and R. Brocklebank, the consequence being that some of the finest blooms seen in the Show gained no awards.

Bouquets, wreaths, and vases of choice flowers and baskets of autumn foliage and fruit are always well shown at the Bristol Chrysanthemum Shows. Mr. C. Winstone, Clifton, was the most successful competitor, but Messrs. Garaway & Co. also had a very beautiful wreath, and abund-

ance of very choice flowers in their second prize bouquet. Other successful exhibitors in these classes were Messrs. M. Hoskings, E. T. Hill, T. Meakins, and J. C. Aiken.

The first prize for a collection of six varieties of fruit was well won by Mr. W. Nash, gardener to the Duke of Beaufort, who had good Alicante and Muscat of Alexandria Grapes, a Melon, Pears, Apples, and Medlars, all in excellent condition. Mr. Bannister was second. The first prize Muscat of Alexandria and Lady Downe's Grapes shown by Mr. J. Gibson, gardener to Lord Cowley, and Mr. Nash's Gros Colman Grapes were decidedly superior. Other successful exhibitors of Grapes and also Apples and Pears, were Messrs. Bannister, J. F. Wilkinson, G. Pym, W. Iggluden, E. Hall, E. T. Hill, C. Cooper, J. Rogers, and A. Miller, gardener to W. H. Long, Esq. Mr. J. Austin had a first prize for a very fine Smooth Cayenne Pine Apple. The best collection of ten varieties of vegetables, and for which the prizes were provided by Messrs. Sutton and Sons, was shown by Mr. J. H. Virgo, Mr. Bannister being a good second. Mr. R. Cripps was first, and Mr. J. W. Virgo second, for six varieties of vegetables.

The most noteworthy among non-competitive exhibits was a large group of healthy, fine-foliaged, and flowering plants, contributed by Messrs. G. Garaway & Co., Durdham Down Nurseries, Clifton, this firm also having an attractive exhibit of cut blooms of Chrysanthemums, which comprised many valuable new and the best of the old varieties found in each section.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S PROVINCIAL SHOW AT HULL.—NOVEMBER 21ST AND 22ND.

CONSIDERING the earliness of the season and the somewhat late date of the Show, also the overlapping of the Birmingham Exhibition, there was a little fear lest the Hull gathering would not be equal to those of former years. It was a distinct advance on last season's display, while the shows of some previous years were weak in comparison. Mr. Holmes pronounced this, the second provincial Show of the N.C.S., a great and gratifying success, quite exceeding his expectations. No Exhibition could be better managed, the President, Secretaries, Treasurer, and members of the Committee all working zealously on well organised lines, and the Judges were at work at 10.30. The Exhibition was opened by the Mayor in a singularly able and interesting speech, and the several cups were presented by the Mayoress to the respective winners of them, on the orchestra, in the presence of a crowd of visitors. The attendance was large throughout, and on the second day children from the orphanage, deaf and dumb schools, workhouse, &c., were made happy by a march through the great Exhibition. The groups were numerous and fine, some of the specimen plants excellent, and 2304 cut blooms were staged, an increase of 569 on the number last year. We are glad to hear that the Show was a financial success. The total number of visitors to the Show during the two days was over 10,000, including 600 charity children and their teachers, admitted free on the morning of the second day. Only a condensed report can be given of so large an exhibition.

The Judges were Mr. John Wright, Mr. George Gordon, Mr. R. Dean, and Mr. Lewis Castle.

PLANTS.

The large entrance hall was extremely gay with three central miscellaneous groups, raised 18 inches from the floor, and effective, six imposing collections of Chrysanthemums, Palms, Ferns, and foliage plants, being arranged along the sides of the building. In the Chrysanthemum group class first honours fell to Mr. J. P. Leadbetter, gardener to Anthur Wilson, Esq., Tranby Croft, with a splendid assortment remarkable for the excellence of the blooms and neat margin. The only fault was a suspicion of stiffness through somewhat too upright staking of a few of the plants, still it was well worthy of the cup it won. Mr. Cottam's second prize group was quite as well arranged, sloping from a height of 9 feet at the apex to the ground, flowers and foliage being tastefully associated, but as evidently most of the Chrysanthemum blooms were from late, or terminal buds, the flowers were necessarily somewhat small. The third prize fell to Mr. R. Willey, gardener to W. Wheatley, Esq., Anlaby Road, Hull, and fourth to Mr. G. Jarvis, gardener to B. Whitaker, Esq., Hessle, with heavy blooms, but too early for the date of the Show.

In the miscellaneous group class the first prize was well won by Mr. E. Wright, gardener to David Wilson, Esq., Park House, Cottingham, with a charming association of Palms, Ferns, Poinsettias, Calanthes, and Callas; and a pleasing margin of Isoplepis, Panicum, and other dwarf plants. Mr. G. Cottam, jun., Cottingham, was an excellent second, and Mr. H. H. Taylor third. Messrs. E. P. Dixon & Sons exhibited a handsome group of plants not for competition, and an excellent assortment of Apples and Pears.

For three trained specimen Chrysanthemums Mr. J. S. Graham, gardener to G. Lawson, Esq., Newland Grove, Hull, secured the chief position with Mr. G. Glenny, Mrs. G. Rundle, and Mrs. Dixon, bearing from sixty to a hundred blooms each, fresh and fine, the plants being also excellent in foliage and training, the trio being quite worthy of a place at any exhibition in the kingdom. His three standards, which also well won the chief prize in the class, were not less remarkable for the superiority of the blooms and general good quality. Mr. Graham was first in the specimen plant class with a beautiful example of Mrs. G. Rundle. Other successful prizetakers in those classes were Mr. H. H. Taylor, Newland; Mr. W. Mason, gardener to A. K. Dibb, Esq., Kirk Ella; Mr. G. Jarvis; and Mr. J. A. Thompson, Hessle. In the class for six bush-grown but not formally trained plants there was excellent

competition, the first prize being admirably won by Mr. G. Hemming, gardener to E. Leetham, Esq., Beechholme, Newland; his Chevalier Domage, with rich foliage and twenty to thirty bright blooms, was a model conservatory plant, and the others were good. Mr. H. H. Taylor was a close and excellent second, and Mr. G. Hancock, Beverley, a creditable third. The worst plants in this class were far better than the best were a few years ago. There were many other creditable exhibits, but we must pass to another section.

CUT BLOOMS.

Liberal provision was made in the schedule for cut blooms, thirty-six classes being devoted to them, with many prizes ranging from £15 to 1s., besides five silver cups, value from fifteen to five guineas. Every inducement was, in fact, offered to exhibitors, and taking the disadvantageous season into consideration the results in numbers and quality were very satisfactory. When it was found that some of the best collections in the kingdom were becoming decimated by the evil effects of "damp" the prospects of the later shows were far from encouraging, and it was thought at one time that the majority would prove positive failures. Happily these forebodings were not realised, and though the competition has necessarily been more restricted, still there has been sufficient in the best classes to awaken considerable interest.

At Hull a good show of cut blooms has been annually produced for some years past, and those who looked for a repetition of previous successes were not disappointed. The leading class was that for forty-eight blooms, twenty-four incurved and the same number of Japanese in not less than eighteen varieties each, the fifteen-guinea silver challenge cup, offered by Lieut.-Col. Gleadow, and £15 constituting the premier, with £10, £5, and £2 as second, third, and fourth prizes. There were only four competitors, the premier position being accorded to Mr. Peter Blair, gardener to the Duke of Sutherland, Trentham, for substantial well-finished blooms of the following. Incurved:—Back row: Lord Alcester, Golden Empress of India, Alfred Salter, Empress of India, and Golden Empress of India, Queen of England, Bronze Queen, and Lord Alcester. Middle row: Bronze Queen, Lord Wolseley, Miss M. A. Haggas, Queen of England, John Salter, Mrs. Heale, Emily Dale, and Empress of India. Front row: Mabel Ward, Emily Dale, Princess Teck, Hero of Stoke Newington, Mr. Bunn, Lady Dorothy, Princess of Wales, and Cherub. The Japanese were of excellent size and colour, and even throughout the stand. The varieties were—Back row: Etoile de Lyon, E. Molyneux, Stanstead White, Boule d'Or, G. Daniels, Val d'Andorre, Ralph Brocklebank, and Etoile de Lyon. Middle row: Boule d'Or, Meg Merrilies, Belle Paulc, Meg Merrilies, Triomphe de la rue des Châlets, Avalanche, Belle Paule, and Fair Maid of Guernsey. Front row: Moonlight, Madame C. Audiguier, Sarah Owen, Stanstead Surprise, Gloriosum, Madame J. Laing, Sunflower, and J. Délaux. The second prize was secured by Mr. D. Heany, gardener to H. G. Schintz, Esq., Mossley House, Park Avenue, Mossley Hill, in a close competition, necessitating careful pointing to determine the relative positions of the second and third prize stands. Mr. Heany's Japanese were very strong, the blooms large and of capital colour; Etoile de Lyon, Sunflower, and Stanstead White were very notable. Mr. Leadbetter, gardener to Arthur Wilson, Esq., Tranby Croft, Hull, was third; and Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, was fourth, with rather small incurved but fresh and good Japanese.

In the next class, that for twenty-four blooms—twelve incurved in not less than nine varieties and the same number of Japanese—there were six competitors. Mr. P. Blair was again adjudged the first prize and a silver cup offered by the Mayor of Hull, J. Sherburn, Esq., for creditable blooms of incurved—Back row: Lord Alcester, Golden Empress, Queen of England, and Empress of India. Middle row: Bronze Queen, Empress of India, Lord Alcester, and Golden Empress of India. Front row: Mrs. Heale, Barbara, Hero of Stoke Newington, and Emily Dale. Japanese.—Back row: G. Daniels, Ralph Brocklebank, W. G. Drover, and Stanstead White. Middle row: Avalanche, Belle Paule, Fair Maid of Guernsey, and Madame J. Laing. Front row: Gloriosum, Val d'Andorre, Madame J. Laing, and Boule d'Or. The second prize was secured by Mr. Leadbetter, who had excellent Japanese and small but even incurved. The third place was taken by F. H. Anthony, Esq., Knighton Church Road, Leicester, with fresh and even blooms of moderate size; and Mr. G. Appleton, gardener to C. H. Johnson, Esq., Thorngumhold Hall, Hull, was fourth.

A silver cup value 5 guineas, offered by the Sheriff of Hull, Arthur Wilson, Esq., contributed the first prize (with £5 in cash) in class 3 for twenty-four Japanese in not less than eighteen varieties. This was awarded to Mr. Heany with bright fresh well developed blooms representing most of the best varieties. Mr. Anthony was second, and Mr. Goodacre third. Six competitors staged in the class for twelve Japanese, distinct, Mr. J. Hare, gardener to J. H. Hudson, Esq., Longcroft, Beverley, winning the first prize with an admirable collection. Mr. Wilton, gardener to G. A. Carr, Esq., Waltham Grove, Grimsby, was a close second; and Mr. Heany third.

Several classes were devoted to incurved blooms, Mr. Heany gaining first honours for twenty-four blooms in not less than eighteen varieties, thereby securing £5 and the National Chrysanthemum Society's silver-gilt medal. He exhibited fairly good blooms well finished and effectively staged. Only one other collection was shown, and that was considered unworthy of a prize. Five exhibitors of twelve incurved in nine varieties staged fairly good blooms. Mr. G. Blatherwick, gardener to H. Wilson, Esq., Cottingham House, Cottingham, won easily with fine examples of Alfred Salter, Golden Empress (3), Lord Alcester (2),

Empress of India, Jeanne d'Arc, Princess of Wales, Lord Wolseley, Queen of England, and Barbara. Mr. Heany, and Mr. E. Wright, gardener to D. Wilson, Esq., Park House, Cottingham.

A class was provided for twelve reflexed blooms, not less than nine varieties, and of the five stands exhibited the blooms from Mr. R. Walker, gardener to Col. Stracey Clithcrow, Hotham Hall, Brough, were found to be the best, capital examples of Cullingfordi, Golden White, Blush Christine, Cloth of Gold, Annie Salter, and Chevalier Domage. Mr. J. Hare and Mr. Davidson, gardener to F. W. Jameson, Esq., Eastella, near Hull. For twelve Japanese, reflexed, in six varieties, Mr. Appleton took the premier place, showing good blooms of J. Délaux, Blaine, Criterion, La Triomphante, Maiden's Blush, M. Astorg and M. Jacotot.

Large Anemones had a class devoted to them, twelve blooms being required in not less than nine varieties, and the great attraction was a five-guinea silver cup offered by Mr. E. C. Jukes, Vice-Chairman of the National Society, and formerly a resident in Hull. The stipulation was attached, however, there must not be less than six competitors, and it at one time became a little doubtful if that condition would be complied with. However, the necessary entries were eventually obtained, and Mr. F. W. Jameson was successful in winning the cup and first prize with excellent blooms, high in the centre, clear distinct colours, and fresh. The chief varieties were Miss Annie Lowe, La Marguerite, Sabine, Lady Margaret, Gluck, Emperor, Acquisition, and M. Pankouke. Mr. F. Mason, gardener to G. Bohn, Esq., Tranby Park, Hessle, and Mr. G. Herdsman, gardener to J. H. Fisher, Esq., Willerhy Hall, were second and third. For twelve Japanese Anemones, in eight varieties, Mr. Mason led with well developed flowers of Jeanne Marty, Sœur Dorothee de Souille, Ratapail, Madame Clos, Minnie Chate, Marguerite Villageoise, and Madame B. Pigny. Mr. F. W. Jameson was a close second, and Mr. Herdsman third. Of four stands of Pompons the best was that shown by Mr. Wilkinson, gardener to Mrs. Ross, Elloughton Lodge, Brough, who had two capital back rows, comprising Golden and White Madame Marthe, Cressus, Black Douglas, Rosinante, Elise Layeillon, Adèle Prissette, and small example of Snowdrop, Trophée, Pink Trevenna, and La Vogue. Mr. G. E. Smith was second also with two good back rows. Mr. J. Hemming, gardener to E. Leetham, Esq., Beechholme, Newland, was third with large but rather coarse blooms.

Pompon Anemones were admirably represented in a premier stand from Mr. Harry Harland, The Sycamores, Cottingham. The varieties Antonius, Mrs. Wyness, Madame Montels, Regulus, Calliope, Madame Chalonge, and Marguerite de Coi were especially good. A class was provided for sweet-scented Chrysanthemums, but few of the seven entries were satisfactory, and several examples of Progne were quite devoid of fragrance. A bunch of single varieties from Mr. H. W. Stanley De-la-Pole, Avenue Hall, was selected as possessing the most pleasant odour. Mr. G. E. Smith was second with a blush reflexed variety, and Mr. Walker third with good blooms of Progne. Single varieties formed an attractive class. Mr. G. E. Smith won the first place amongst four competitors, and had an excellent collection, including several promising seedlings, one of which, Ethel Smith, with soft pink florets, white at the base, received a first class certificate from the Floral Committee. The other varieties were Patience, Master Frank, Arthur, Lady Brassey, Magenta King, King of the Yellows, and Mary Anderson. Messrs. E. Goddard and Harry Harland were second and third. The finest six incurved blooms of one variety were shown by Mr. Blair, the variety being Golden Empress, and Mr. Graham followed with Lord Alcester. In a corresponding class for six Japanese Mr. Coates was first for deep substantial blooms of Avalanche. Mr. Burrows followed with Boule d'Or, and Mr. Walker third for Madame C. Audiguier. The class for six bunches of Mrs. G. Rundle, Mrs. Dixon, and G. Glenny was a good one, the eight competitors all showing good blooms of the useful varieties named. Messrs. Graham, Smith, and Taylor were the prize-takers in the order mentioned. A silver cup, offered by Messrs. E. P. Dixon & Sons, for twenty-four blooms (twelve incurved and twelve Japanese, six varieties each) was adjudged to Mr. Blatherwick, who had the best blooms amongst seven competitors, fresh well-developed blooms in both cases, Messrs. Hotham and Walker following.

The amateurs' classes for cut blooms were well filled, and the exhibits were of good quality in the majority of cases. The following competitors secured the chief prizes:—Messrs. A. W. Stanley, S. Higham, J. Melbourne, G. F. Grant, J. W. Briggs, R. R. Risdale, H. Willford, T. Maplebeck, G. Hancock, R. B. Chapman, W. Howell, E. Goddard, and J. W. Robinson.

Premier Blooms.—In the open classes the prizes for the best incurved were granted to Mr. Blair for Golden Empress, for Japanese to Mr. Heany for Etoile de Lyon. In the amateurs' classes to Mr. Stanley for Barbara, and to Mr. Howell for Boule d'Or.

Mr. Morton, Darlington, exhibited a good and varied collection of blooms not for competition.

A large annexe was devoted to floral decorations, in which Chrysanthemums were chiefly employed, and these constituted together a very pleasing portion of the Exhibition. The tables were the least satisfactory, however, as all, including the prizewinners, were defective in some particulars.

In the evening of the opening day a Conference was held in the Hull and East Riding College, Mr. R. F. Jameson presiding, when excellent papers were read by Mr. George Gordon and Mr. John Wright that were followed by a prolonged and important discussion. There was a large attendance of amateurs and gardeners, and the meeting was one of the most satisfactory yet held.

SHEFFIELD AND WEST RIDING.—NOVEMBER 22ND AND 23RD.

THE fifth annual Show of this Society was held on the above dates in the spacious Corn Exchange, than which a more suitable building for the purpose of such a display could scarcely be found. The Show was in all respects superior in general effect, as well as in both quantity and quality of the plants and cut flowers exhibited, to any of those previously held by the Society, and reflected most creditably upon the energy and tact which has been displayed in carrying it to so successful an issue by the officials and Committee, and especially the indefatigable and courteous Secretary, Mr. W. Housley, and the Hon. Treasurer, Mr. H. Broomhead. A most comprehensive and liberal schedule had been provided, an aggregate sum of close upon £200 being offered in prizes.

In the open classes for cut flowers exceptionally liberal prizes were offered—viz., a silver cup value £10 10s. and £5 in cash for twenty-four incurved flowers, and a like silver cup and cash prize for twenty-four Japanese cut flowers. These prizes brought together five competitors in each class, most of them well known men in the Chrysanthemum world, as Mr. Parker, Impney; Mr. Lambert, Onslow Hall, Shrewsbury; Mr. Cox, Wavertree, Liverpool; Mr. Goodacre, Elvaston Castle, Derby; and Mr. Green, Shirecliffe Hall Gardens, Sheffield. In the class for twenty-four incurved, not less than eighteen varieties, Mr. John Lambert, gardener to Col. Wingfield, was placed first with smooth, solid, fresh blooms, the varieties being similar to those in his Leicester stand. The second prize in this class was obtained by Mr. R. Parker, and the third by Mr. R. Cox. Very little disparity in merit existed between these stands or between the corresponding stands in the Japanese class, and the Judges found considerable work in justly apportioning the prizes. In the class for twenty-four Japanese blooms, not less than eighteen varieties, Mr. Parker was placed first, his blooms having a little the advantage in size and weight over those of his opponent's. His varieties were much the same as he staged at Birmingham. In the open class for twelve incurved blooms Mr. Lambert was again first, his blooms being excellent. Twelve Japanese, distinct.—First, Mr. A. R. Cox, with Sunflower, Meg Merrilies, Japonais, Comte de Germiny, Madame J. Laing, Charlie Sharman, Mdle. Lacroix, Madame C. Audiguier, Val d'Andorre, Boule d'Or, Jeanne Délaux, and Ralph Brocklebank. In this, as in his stand of twenty-four, Mr. Cox's Japanese flowers were exceedingly young, fresh, and brightly coloured, but not quite of the largest size.

In the district classes, open to growers residing within a radius of twenty miles from Sheffield, there was good competition, and the flowers shown by several exhibitors were but little inferior to those shown in the open classes. Mr. Green, Shirecliffe Hall Gardens, and Mr. James Harrison, Walkley, were the most successful exhibitors with very large and good blooms. In the amateur and cottager classes, "open only to those who do not employ a gardener," there was an immensely keen competition, and numbers of very good flowers staged. In the smaller classes, for six and three flowers in each, there were upwards of twenty competitors, as many as eight prizes being awarded in each class. Striking improvement was manifest in the general quality of the flowers shown in these classes over the exhibits by the same growers in previous years.

In the classes for plants and groups again a decided improvement was noticeable over previous years' exhibits. Groups were especially well shown, both those for Chrysanthemums and those for miscellaneous plants. In the class for a group of Chrysanthemums, occupying space of 64 square feet, Mr. Pidsley, gardener to Mrs. H. Wilson, Westbrook, was placed first, Mr. Green second, and Mr. J. Harrison third. In the class for miscellaneous groups Mr. Pidsley was again first with a beautiful arrangement, which elicited much admiration. Mr. W. Collier, gardener to Mr. J. Eaton, Sharrow Bank, was placed second with an excellent group, but rather too closely packed. Amateurs' groups (miscellaneous plants) were numerous and good. In these Mr. M. Taylor was first, Mr. G. S. Stocks second, Mr. R. Gascoyne third, and Mr. J. Swinden fourth.

The specimen plants shown were throughout better than last and preceding years, Messrs. C. Green and E. Pidsley being the principal prizewinners. Excellent groups, not for competition, were staged by Messrs. Fisher, Son, & Sibray, Handsworth Nurseries; Messrs. H. Shaw and Son, Richmond; Mr. B. Crossland, Richmond; Mr. D. B. Fellowes, Pitsmoor; and Mr. S. Seagrave, nurseryman, Gleadless. Primulas were numerous and of high quality. The same may also be said of Ferns, British and exotic, Mr. John Eadon—a name well known to growers of British Ferns, being the most prominent prizewinner, with large plants of choice and rare varieties, all in the most vigorous health.

Certificates were awarded to Mr. S. Coleman, a pleasing bronze sport from Princess of Wales (incurved), exhibited by Mr. R. Owen; and to Mr. R. Hartland for a patent method of holding tubes in flower boards immovable.

The Show was opened to the public at 1 P.M. on the 22nd, by the President of the Society, Mark Firth, Esq., assisted by Sir H. E. Watson, Sir H. Stephenson, and other gentlemen. There was a crowded attendance on the evening of the second day, but only a moderate one during the first day.

LOUGHBOROUGH.—NOVEMBER 23RD.

THE fifteenth Show was held in the Town Hall, when, considering the lateness of the date, the blooms were in good condition. The groups of Messrs. J. Smith and J. & H. Hickling were especially good, and worthy of a higher prize. Messrs. F. J. Rowbotham and E. Whelland were the most successful exhibitors of specimen plants. In the class for eighteen blooms, incurved, distinct, Mr. J. Beeby, gardener to the Rev.

J. Bird, was first with Lord Alcester, Alfred Salter, Emily Dale, Lord Wolsely, Empress of India, Queen of England, Brouze Jardin des Plantes, Jeanne d'Arc, Princess of Wales, John Salter (good), Empress Eugénie, Mr. W. Shipman, Lady Slade, Barbara, Princess of Teck, Lady Hardinge, Eve, and Prince of Wales. Second, Mr. J. Smith, who had a very good Hero of Stoke Newington. Third, Messrs. J. & H. Hickling. Twelve blooms, incurved.—Rev. J. Bird was first with Empress of India, Alfred Salter, Lord Alcester, Queen of England, J. Salter, Emily Dale, Lord Wolsely, Princess of Wales, Lady Hardinge, Mr. Shipman, Jeanne d'Arc, and Barbara. Second, Mr. J. Smith. Third, J. & H. Hickling. Six blooms, incurved.—Rev. J. Bird was again first with a good stand, Messrs. J. Smith and A. Squires following. Twelve blooms, Japanese.—First, Mr. W. S. Botton, gardener to Major O'Neal, Ratcliffe Hall, who had Boule d'Or, Avalanche, Ralph Brocklebank, Meg Merrilies, Baronne de Prailly, Japonais, Val d'Andorre, Gloriosum, Golden Dragon, J. Délaux, Fair Maid of Guernsey, Criterion. Second, Mr. J. Smith. Third, Rev. J. Bird. Mr. Bolton was also first with six blooms, Rev. J. Bird second, Mr. J. Smith third.

Bouquets of Chrysanthemums, with Grapes, Apples, and Pears were well represented, but cannot be more particularly referred to.

BIRMINGHAM.—Nov. 20TH AND 21ST.

THE twenty-ninth annual Exhibition is now a thing of the past, and the Committee were fortunate in having two days of mild dry weather, and an enormous crowd of visitors on each day. Of the Exhibition we must speak in the highest terms of praise, and this opinion was universal amongst the visitors. The Society has a large body of subscribers, somewhere about 350, and a large number of tickets are sold beforehand, so that the actual income of the Society for 1889 cannot yet be told until the accounts are made up, but some idea may be formed of the great increase this year from the following statement. The money taken at the doors for admission amounted in 1887 and 1888 to just about £170 each year, whilst for the current year the takings at the doors at the recent show amounted to close upon £280; and at times during the evening, such was the great pressure in the crowd of the visitors, the doors had to be closed, and a great many either left the Hall very soon after going in, or could not go in at all.

The blue riband of the Exhibition was the £25 first prize for forty-eight blooms, twenty-four incurved and twenty-four Japanese, and it brought eight exhibitors, and, taking the blooms generally, we are bound to say that they were fine. The first and second prize lots were extremely close together in size and quality, the first to Mr. Parker, gardener to J. Corbett, Esq., M.P., Impney, Droitwich, with the following varieties:—Incurved—Back row: Queen of England, Emily Dale, Alfred Salter, Miss Haggas, Princess Teck, Empress of India, Golden Empress, Lord Alcester. Middle row: Charles Gibson, Lady Hardinge, Mrs. Heale, Lord Wolsely, Prince Alfred, Princess of Wales, Hero of Stoke Newington, Jeanne d'Arc. Front row: Refulgens, Mrs. Shipman, fine; Mr. Brunlees, Lord Eversley, Mrs. N. Davis, Violet Tomlin, Cherub, and one other whose name we could not get. Japanese:—Back row: Boule d'Or, E. Molyneux, Avalanche, Sunflower, Triomphe de la rue des Châlets, Gloriosum, Fair Maid of Guernsey, Madame C. Audiguier. Middle row: Mons. Bernard, Meg Merrilies, Carew Underwood, Mr. Henry Cannell, Madame Laing, Mdle. Lacroix, Criterion, Ralph Brocklebank. Front row: Thunberg, Ed. Audiguier, Mrs. Henry Cannell, Sarah Owen, Florence Percy, Duchess of Albany. Second prize, £15, Mr. W. Marshall, Uttoxeter, in whose stand were especially fine flowers of Etoile de Lyon, Triomphe de la rue des Châlets, Mrs. Norman Davis, Lady Carey, Cherub, and Princess of Teck. Third, Col. Wingfield, Shrewsbury (gardener, Mr. J. Lambert) a very fine lot. Fourth, Sir T. E. Moss, Bart. (gardener, Mr. Lindsay); fifth, Sir Richard Moore, Bart., Coventry; sixth, Lord Heytesbury (gardener, Mr. J. Horsefield). There were eight exhibits in this class, and these special Centenary prizes had been raised chiefly by private subscriptions obtained by Mr. J. Hughes, the energetic Secretary of the Society. The sum of £54 10s. was expended in these six prizes.

For twenty-four blooms, twelve incurved and twelve Japanese, there were several exhibitors. Here again Mr. Parker secured the first prize with a fine lot of blooms—viz., Japanese:—E. Molyneux, Gloriosum, Madame C. Audiguier, Meg Merrilies, Sunflower, Souvenir de la rue des Châlets, Boule d'Or, Jeanne Délaux, Mrs. H. Cannell, Thunberg, Duchess of Albany, and Avalanche. Incurved.—Princess Teck, Lord Alcester, Queen of England, Golden Empress, Miss Haggas, Violet Tomlin, Mrs. Heale, Princess of Wales, Hero of Stoke Newington, Charles Gibson, Mr. R. Davis, and Lord Eversley. Second, Mr. C. H. Wright, Oswestry. In this stand was a grand bloom of Etoile de Lyon, but almost white. In Mr. Wright's stand we noticed very fine blooms of Avalanche and Madame Louise Leroy. Third, Mr. Austin, gardener to the Earl of Dudley, Witely Court. In the class for eighteen incurved Chrysanthemums Mr. Parker was again first with a very fine stand. Second, Mr. W. Marshall. Third, the Earl of Dudley. For twelve blooms, Japanese, first the Earl of Dudley; second, Mr. Parker; third, Mr. Coombe, gardener to the Countess of Dudley, Himley. In the class for twelve Anemone flowered Mr. Coombe staged a beautiful stand of flowers, which were much admired—viz., Monsieur Cabrol (2), Fabian de Mediana (2), Miss Annie Lowe (2), the latter a lovely creamy-coloured flower; Souvenir de Madame Blandinières, Duchess of Edinburgh, Georges Sand, distinct and good; Fleur de Marie, Princess Louise, and Acquisition. In Class 14, for twelve Japanese and twelve incurved grown in Birmingham, Mr. O. Brasier, gardener to Sir Thomas Mar-

tineau, was first with a superb lot of flowers, and he also carried off the first prize for twenty-four blooms grown in Birmingham.

There were two classes for groups of Chrysanthemums, Mr. Cooper, gardener to the Right Hon. Joseph Chamberlain, M.P., being a good first with a very telling group; and Mr. Brasier, gardener to Sir Thomas Martineau, second; Mr. F. A. Walton third. There were seven exhibitors, Mr. W. H. Dyer, gardener to Mrs. Marigold, Edgbaston, taking the first prize.

Birmingham has always been noted for the excellence of Chrysanthemums in pots. Four nines were staged, and Mr. Cooper, gardener to the Right Hon. Joseph Chamberlain, M.P., was first for very fine specimens, as well as for six plants. Sir Thomas Martineau's second prize nine were admirable, and Mr. Denning a good third. Mr. Dyer, to whom an extra prize was awarded, was too early for the Show, his plants being at their best a fortnight since. Other classes for Chrysanthemums in pots were well filled. Three collections of six ornamental plants were staged, all first rate. Mr. Dyer scored first, and had two magnificent Crotons, Queen Victoria and C. Weismanni.

Two lots of six Orchids were staged. First prize Mr. Barnes, gardener to Charles Winn, Esq., Selly Oak, with a large lot of *Cypripedium Spicerianum*, *C. Sedeni*, *Oncidium tigrinum*, a fine example of *Calanthe Veitchi*, *Masdevallia Veitchi grandiflora*, and another Orchid. Second, G. H. Kenrick, Esq., Edgbaston (Mr. W. A. Powell, gardener). Messrs. Heath & Son, nurserymen, Cheltenham, sent a few Orchids, amongst them a plant of *Lælia Tresederiana*, so named by Professor Reichenbach, to which a certificate was awarded.

Primulas were to the front. They are always shown well at Birmingham: 330 plants were staged in competition for the various prizes, and they were a splendid lot. In the open classes Messrs. Thomson and Co., nursery and seedsmen, Birmingham, took the first prize for twelve and six plants of singles, Messrs. Pope & Sons second. For six doubles Messrs. Thomson first, as well as for six Fern-leaved varieties, and also taking the premier prize for the best single Primula in the Exhibition, a fine plant of *Empress* with exquisitely tinted flowers. In the gentlemen's gardeners' class for twelve single Primulas Sir Thomas Martineau's gardener was first, and for six single Primulas first Mr. Cooper. Then there are special prizes given by Messrs. Thomson & Co. and Messrs. Pope & Sons for Primulas, and plenty of exhibits resulted. For six dinner table plants several lots were staged, all so suitable, light and elegant. Bouquets were remarkable for their quality and beauty; there were two classes, one for nurserymen only. First, Messrs. Perkins & Sons, Coventry. Second, Messrs. Pope & Sons, Birmingham. Third, Messrs. Jones & Sons, Shrewsbury.

Fruit was well represented, good quality prevailing all round. For six bunches of Grapes, any colour, first, Mr. Goodacre, Elvaston, with Lady Downe's, Gros Colman and Gros Maroc, two bunches of each. Second, J. F. Campbell, Esq., Uttoxeter (gardener, Mr. J. Hollingsworth), with Lady Downe's and Alicante, two bunches of each, and one bunch each of Mrs. Pince and Gros Guillaume. Third, the Earl of Cork, (Mr. W. I. gulden, gardener), with Black Alicante, Lady Downe's, and Muscat of Alexandria, two bunches of each. For three bunches of black Grapes, first, J. F. Campbell, Esq., with two bunches of Black Alicante and one of Lady Downe's well finished and beautifully coloured. Second, Mr. Goodson, Elvaston, with three short compact highly finished bunches of Gros Colman. For three bunches of white Grapes, first, H. C. Curzon, Esq., with superb highly coloured Muscat of Alexandria. There was an extensive display of Apples for competition. For six dishes of kitchen Apples, first, R. H. C. Neville, Esq., Grantham, with Emperor Alexander, Brabant Bellefleur, Stirling Castle, Betty G c on, Mère de Ménage, and Golden Spire. First for six dishes of dessert Apples, Colonel Paulet with Ribston Pippin; Blenheim's; Cox's Orange Pippin; Matchless Pearmain, handsome; The Queen, bright and handsome, and another variety without name.

Some fine Pears were staged. First for eight dishes, Mr. Parker, Impney, amongst them grand Beurré Diels and Glou Morceau, fine Duchesse d'Angoulême, Ne Plus Meuris, Winter Nellis, and extremely fine Gansel's Bergamot. Second, Mr. Goodacre. Messrs. Richard Smith & Co., Worcester, sent, not for competition, a fine display of Apples and Pears remarkable for colour and quality. The Sawbridge-worth lot contained some very fine Pears and Apples, amongst the latter a fine dish of the handsome Melon Apple, Lane's Prince Albert, the pretty Pigeon table Apple, and King of Tomkins County, Buckingham, and Schoolmaster. Mr. J. Hodges, King's Heath, Birmingham, staged four excellent dishes of Tomatoes, including Golden Queen. Honorary exhibits were an attractive feature of the Exhibition. Messrs. Pope and Sons contributed a bright group of winter blooming Zonals, amongst them Le Bruet, with very large truss, and Souvenir de Mirande, bright cerise pink, with light centre, and very beautiful, were prominent; also a very beautiful erect cross, with flowers on all sides and a handsome base of Ivy; also a stand of fancy Pansies. Messrs. Vertegans and Co. contributed a group of Cyclamens, President Cleveland Bouvardia, Poinsettias, &c., and a fine memorial cross. Messrs. Thomson & Co. had a very artistic group, in which were specimens of *Nephrolepis rufescens triplinatifida*, handsome examples of *Celosia plumosa pyramidalis*, a group of the pretty *Primula floribunda*, Crotons, Selaginellas, and a charming centre of *Plumbago rosca*, Asparagus, variegated Eulalias, Tuberoses, &c.; also a handsome chaplet of flowers for funeral use. Messrs. Hewitt & Co., nurserymen, Solihull, had a nice batch of Zonal Pelargoniums and an excellent display of Cyclamens, a beautiful lot of Bouvardias, *Primula obconica*, and other plants. Mr. F. Denning, florist, also had a fine batch of Cyclamens,

in which whites predominated. Messrs. Sutton & Sons, Reading, sent a collection of thirty leading varieties of Potatoes, many of the samples being very fine indeed, amongst them Abundance, Reading Russet, Nonesuch, Prizetaker, Sutton's Early Regent, Satisfaction, Matchless, and some fine looking seedlings not yet sent out. Mr. Lambert, gardener to Colonel Wingfield, was first for a collection of vegetables in his usual style.

Three blooms of John Lambert incurred Chrysanthemum, a sport from Lord Alcester, were sent by Mr. Lambert, we believe, but the Judges did not consider it to be sufficiently distinct. Notetaking was extremely difficult in consequence of the very crowded state of the hall.

Mr. R. Owen, Maidenhead, showed a large collection of new Chrysanthemums, including many fine novelties.

THE CENTENARY SHOW AT EDINBURGH.—Nov. 22ND AND 23RD.

THE Waverley Market was never better decorated for a flower show than on this occasion, a firm of decorators having done their best to brighten the somewhat dull monotony of the huge building. Competition was encouragingly large—about 800 entries—and the public came in their thousands—10,000 having visited the Show the opening day. The Exhibition was opened by the Lord Provost, when the cup given by the Corporation was presented to the winner. Expenses were very heavy, and the Council of the Scottish Horticultural Association, who got up the Exhibition, carried the mercantile spirit to the extreme, chairs being charged for, and the names of exhibitors could only be found by consulting an official catalogue, for which an enterprising individual provided £30 to the common fund for the right to sell. On the Friday a Conference was held, at which papers were read. On the evening of that day the financial success would appear to have also been secured.

Cut Blooms.—The chief prize was the cup, value £20, offered by the Corporation of the City of Edinburgh (£7, and £3 10s. being added by the Association as second and third prizes) for forty-eight blooms, Japanese, in at least thirty-six varieties. This brought out eight exhibitors, one of whom was unfortunately found to have only thirty-five distinct sorts, and so placed out of the running, though his chances appeared to be very good otherwise. The cup was finally adjudged to those set up by Mr. McHattie, gardener to the Marquis of Lothian, Newbattle, in whose stand were some of the most massive in the Exhibition, particularly fine being Madame C. Audiguier (two blooms), Sunflower (two), Mrs. J. Wright (two), Avalanche (two), Boule d'Or (two), Comtesse de Beauregard, Mrs. F. Jameson, Baronne de Prailly (two), Maggie Mitchell. Very good were Val d'Andorre, Amy Furze, Ed. Molyneux, R. Brocklebank, Meg Merrilies, W. Holmes, Frederick Marrouch, M. J. Laing, Gloriosum, Elaine, La Triomphante (two), Duchess of Albany (Jackson), Mdle. Lacroix, Stanstead Surprise, Madame Baco, Comte de Germiny, Theodora Bullier, Stanstead White, Jeanne Délaux; the others being Hamlet, Hiver Fleuri, Dr. Macary, Buffalo Bill, Lady Lawrence, Triomphe du Nord, Mdle. M. Fabre, Japonais, Soleil Levant, Maiden's Blush, and Criterion. Mr. Parker, Impney, Droitwich, was placed second; and Mr. G. Cockburn, gardener to G. Burden, Esq., Langdale Lodge, Birkenhead, third.

For thirty-six blooms, twenty-four Japanese and twelve incurved, there were also a number of fine boxes staged, the incurved generally wanting in finish, but in this respect better than in former years. This was confined to Scottish growers, a challenge cup and five guineas being the first prize. This was secured by Mr. Milne, Broomknowe. The incurved were full and good, including fine (2) *Empress of India*, Queen of England, Lord Alcester, (2) *Beauty*, Bronze Jardin des Plantes, John Salter, Jeanne d'Arc. Extra—Japanese: (2) Maiden's Blush, (2) Jeanne Délaux, (2) Amy Furze, Triomphe du Nord, Elaine, Etoile de Lyon, Mdme. J. Laing, Dr. Macary, Carew Underwood, Gloriosum, Meg Merrilies, Belle Paule, Baronne de Prailly, Stanstead White, Val d'Andorre, M. Astorg, Peter the Great, Mdle. Lacroix, Florence Percy, and Comtesse de Beauregard. Second, Mr. R. Grossart, gardener to J. Buchanan, Esq., Edinburgh, and third Mr. John Machar, gardener to R. Mudie, Esq., Broughty Ferry. For twenty-four blooms, twelve Japanese and twelve incurved, Mr. G. Burden was first. Incurved, extra fine: Alfred Salter, Golden Empress, Lord Alcester, Queen of England, Miss Haggas, Hero of Stoke Newington, Empress of India, Jardin des Plantes, Jeanne d'Arc, Mrs. Heale, Princess of Wales. The best Japanese were, Stanstead White, Boule d'Or, Japonais, Avalanche, J. Délaux, Meg Merrilies, Mons. Brunet, Sunflower, Madame Baco, S. Owen, and R. Brocklebank. Second, Mr. Matheson, gardener to D. E. Outram, Esq.; third, Mr. D. Forbes, gardener to A. Holt, Esq., Crofton, Aigburth. For twenty-four Japanese, at least eighteen varieties, Mr. Rushton, gardener to R. Tod, Esq., Clerwood, Corstorphine, was first with very fine even blooms; Mr. G. Burden second, and Mr. D. Forbes third. For twenty-four incurved, not less than twelve varieties, Mr. Matheson secured the first place, Mr. J. Short second, and Mr. Watt, Largs, third. Mr. Pirie, gardener to Scott Plumes, Esq., Selkirk, was first for twelve Japanese with fine examples. For twelve incurved, Mr. Q. Geddes, Knock Castle, Largs, was first with a very fine bloom, comprising three Golden Empress, Miss Haggis, H. Shoemith, Lord Alcester, Golden Empress, Prince Alfred, Pink Perfection, Princess of Wales, Lord Wolseley.

The smaller classes were also well filled. Messrs. R. B. Laird & Sons secured first prizes for sixty blooms, twenty-four incurved, twenty-four Japanese, and twelve reflexed (open to nurserymen only) with a good lot. Messrs. Kerr & Son, Roxburgh, second. For thirty blooms the first-named were the only exhibitors. Mr. Morton exhibited some of the

best varieties of Japanese, and from Messrs. Cannell & Sons, Swanley, were a stand of Etoile de Lyon, another of varieties for cutting, and four dozen trusses of Pelargoniums, which attracted a great deal of attention. Messrs. Todd & Co., Maitland Street, exhibited some lovely samples of bouquets, baskets of flowers, &c., and a number of stalls occupied one side of the market where trade could be done in various articles.

Plants.—These were generally below the average quality, the best being those with which Mr. Calder, Calder Bank, Trinity, secured the first prize for four plants Japanese, and four of large flowering sorts. They were grown naturally and with large blooms, Madame de Sevin and Mons. W. Holmes being specially noteworthy. The same exhibitor staged a good example of E. Molyneux and of Criterion in the amateurs' section for two plants. The plants with which Mr. Carruthers, Hillwood, secured the first prize for three incurved sorts were also very fine, these being Mrs. Rundle, G. Glenly, and Mrs. Dixon. Pompons were generally poor. For a group 15 feet in diameter Mr. Grossart was easily first, the second prize lot being especially stiff. Messrs. Jas. Dickson and Sons, Hanover Street, secured prizes for Coniferae and for hardy plants in pots, and for Primulas and kindred plants there was a good competition. Messrs. F. Methven & Sons, Princess Street, contributed largely to the adornment of the building, a fine group of large flowered and Japanese Chrysanthemums with Roman Hyacinths, brightening one of the darkest corners, while in other parts were groups of Conifers.

Fruit.—There was a good show of Grapes, Pears, and Apples—many hundreds of dishes. Mr. Murray, gardener to J. Learmont, Esq., Polmont, secured the first prize for six bunches of Grapes, Gros Colman, Muscat of Alexandria, Lady Downe's, and Alicante being very good. Mr. Murray, gardener to the Marquis of Ailsa, Culzean, second. For three bunches, Mr. J. Leslie, gardener to A. Coates, Esq., Pitculen House, Perth, was first with beautiful examples of Gros Colman, Alicante, and Muscat. Mr. Murray, Polmont, second. Mr. McHattie had the best two and the best single bunch of Muscat of Alexandria, both fine. Mr. Bell, Clive House, Alnwick, with a small, well finished cluster, had first prize with Alicante. Mr. Neil, Peel Towers, Ayton, second with a very large, fine bunch. Gros Colman was also well shown, Mr. Murray being first. The best Black Hamburgh received only a second prize. These were from Mr. Murray, Polmont. Mr. Burnett had a commendation for a box of Gros Colman and Lady Downe's, grown as for market purposes. Messrs. Thomson, Clovenfords, also exhibited fine examples of market Grapes along with Apples in variety.

The prizes for Apples brought out a vast show. For the best collection of at least thirty varieties the prize was easily secured by Mr. Woodward, gardener to A. Leigh, Esq., Barham Court, Maidstone, with about 130 dishes of most approved varieties. Mr. Waterman, gardener to H. A. Brassey, Esq., Prestonhall, Aylesford, was a good second with about seventy dishes, many of which were equal in quality to the first prize lot. Mr. Brown, Chesters House, Ancrum, third. For eighteen varieties of Apples and six of Pears, confined to Scottish growers, there was a strong competition, the first place being secured by Mr. A. Wilson, gardener to R. A. Oswald, Esq., Auchincruive, Ayr; Mr. Cairns, The Hirsell, Coldstream, being second. Mr. Woodward secured first prizes for, respectively, six varieties kitchen and six varieties of dessert Apples, and for six varieties of dessert and three of culinary Pears, in each case with fine examples. Apples and Pears were extensively shown by Messrs. G. Bunyard and Co., Maidstone (who won the gold medal), while Mr. Watkins, Hereford, had a small collection, and from Nova Scotia a representative collection was exhibited. Market growers also showed Apples, and at least one "shop" collection was set up.

Vegetables were fairly numerous, the best collection, which contained good Leeks, Celery, Brussels Sprouts, Cauliflowers, Tomatoes and Onions being set up by Mr. G. Potter, gardener to Mrs. Laidlay, Seaclyffe, North Berwick; the best market grower's collection being staged by Mr. Milne, Sunny Park, Leith. Cauliflowers, Leeks, Celery, Tomatoes, and Potatoes were also well shown.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest House.*—When the buds commence swelling maintain a temperature of 40° to 45° at night, and 50° to 55° by day, admitting air moderately at the latter figure, allowing the temperature to rise to 65° from sun heat, syringing the trees and every available surface morning and afternoon until the blossom buds are showing colour, after which syringing the trees should be discontinued. There must be no attempt at a close atmosphere, but allow a little air at the top of the house to lessen the condensation of moisture by the glass. The inside border will require to be well supplied with moisture. Trees that have been forced previously and are not unduly vigorous may have a good supply of liquid manure slightly warmer than the atmosphere. Borders inside require careful watering, making sure that every part of the soil is thoroughly moistened. Outside borders

will be benefited by lights or shutters in addition to a covering of bracken or litter for throwing off heavy rains or snow.

Houses to Afford Ripe Fruit in May or Early June.—The house should be closed early in December, but no fire heat employed except to exclude frost, and for an hour or two in the early part of the day, if the weather be severe, not, however, exceeding 50° by fire heat in the daytime, syringing the trees and every available surface morning and afternoon. A ridge of thoroughly sweetened manure and leaves placed in the house after the border is well moistened will afford a genial atmosphere superior to that obtained from hot-water pipes, admitting air whenever the weather permits, Peaches delighting in a well-sweetened atmosphere.

Succession Houses.—Push forward the pruning, thoroughly cleansing the glass and woodwork, whitewashing the walls, and dressing the trees for the destruction of insects. Secure the trees to the trellis, top-dress the borders, and keep the house cool by ventilating abundantly in mild weather. If the roof lights are moveable and off, by all means let them remain so until the time arrives for starting the trees. No frost will injure the wood if it be ripe, and if not ripe satisfactory crops are not obtainable.

PINES.—*Young Stock.*—Well ventilated span or three-quarter span-roofed pits or small houses are the most suitable for small plants, which at this season often suffer irreparable injury from being kept too close and warm. At night 65° should not be exceeded, but a mean between that and 55° at night, which, with 65° in the daytime, will be suitable, admitting a little air at the top of the house at 65°, but not to lower the temperature below that point, and when the sun raises the temperature to 75° a free circulation of air should be allowed. Keep the bottom heat steady at 80°, avoiding anything approaching to a damp atmosphere; moderate humidity will suffice. Apply water only when the plants become dry, and then give weak liquid manure. Keep the plants near the glass, and allow them plenty of room.

Suckers.—Those ready for starting now should be kept until March, and if there is likely to be a scarcity of suckers, any recently potted may be retained in 5-inch pots, affording them a light position in a moist pit, with a slight bottom heat and a temperature of 55° at night, keeping them rather dry at the roots.

Fruiters.—In this department 65° will be ample at night, 5° lower in the morning in cold weather, 70° to 75° by day being maintained artificially. Take every opportunity of collecting leaves whilst dry, Oak and Beech being the best, and whenever a favourable opportunity offers push forward whatever may be necessary in the renewal or augmenting the fermenting beds.

KITCHEN GARDEN.

COMPLAINTS are frequent of a deficiency of hands in many gardens, and where this is so a close study of the arrangements of labour will facilitate matters wonderfully.

VEGETABLES IN FRAMES.—Now is the time these are most difficult to preserve from damp. They do not require much water at the roots, and they keep much better when a little too dry than when too wet. Abundance of air should be admitted on every favourable opportunity, and on fine days, especially when the sun is out, the lights should be drawn off. When it is necessary to water them apply it early on such days.

HOTBEDS.—These will soon be in great demand where midwinter and early spring forcing is practised. Pits and frames heated with hot water are the best for forcing, but where these are not available the hotbed will be found most useful, but the amount of service to be secured from it will depend on the manner it is formed. Suitable manure and leaves should be mixed about a fortnight before the bed is wanted, and turned over every other day until the violent heat and steam have escaped. When the bed is finally formed and made firm it will not subside much, and the heat will be steady and lasting. We have just filled a three-light frame on such a bed with Rhubarb roots, which will give a good return in about four weeks. If a number of Seakale roots are lifted, placed in 10-inch pots as close as they will stand, and plunged up to the rim, good produce will be afforded; but it must be grown in the dark to be tender.

DEAD LEAVES ON WINTER GREENS.—There are now many withered leaves on Brussels Sprouts, Savoys, and other winter greens. When these leaves are allowed to remain and decay slugs and snails find congenial quarters under them, and the uncleaned quarters are always worse to deal with in spring than those which have had a little attention as suggested.

WINTER SPINACH.—This is one of the most useful winter vegetables. The September-sown seed has produced luxuriant plants, and in gathering the leaves the largest should be taken first, as should sharp frost occur these will shrivel considerably, and may become unfit for use. The removal of the largest also allows the younger and more central leaves to become hardy, which is an advantage in December and onwards.

PARSLEY.—So far this is abundant, but a severe frost would cause it to decrease rapidly, and in cold districts provision should be made to over it. If frames and lights are disengaged put them over some of best of the Parsley. Hoops may also be placed over the rows to support mats or canvas during the time of frost and snow. We have tried to force Parsley when scarce, but the result was not satisfactory, and it is much better to preserve the crop in time than allow it to be partially destroyed.

Apply lime or manure and rough dig vacant quarters. Where

Cauliflower or Broccoli are apt to have their heads injured by frost cut them when small and store in a cool place. By removing the leaves from the heads and inserting the stems in moist sand they will retain their freshness for three weeks. Place a quantity of long littery manure around the neck of Globe Artichoke plants, as if unprotected when caught by frost they will be crippled so much as to interfere with their success next season.

THE BEE-KEEPER

QUEEN REARING IN RELATION TO HYBERNATION AND WINTER DYSENTERY.

ON May 16th, 1889, page 407, I touched on this subject, but for want of time I could not do full justice to it, and I promised to deal with it as soon as I could. The article was reprinted across the Atlantic, and caused some stir in America. Mr. James Heddon, whom I quoted as being the champion of the pollen theory, had a laugh at me, saying that he reared nearly all his queens by the "natural (?) method in full colonies under the swarming instinct," and implied that I did not know what I was writing about. This is his mode of rearing queens: He lets the stocks swarm, then he places the swarms in a new hive, and sets it on the stand of the old stock so as to get more than a fair share of the bees from the old stock. This is placed behind the swarm with the entrance facing the opposite way. He then daily moves it round until at the week end the entrances of both hives are one way and close together. When the bees are at full work he takes the old stock away to a fresh stand, so that all the bees which are out in the fields and those that are working fly to the old stand, and, not finding it, unite with the swarm. The result is that the old stock is so depleted of bees they at once lose the desire to swarm a second time, and the first queen that hatches destroys the rest. This is known as Heddon's system of preventing after-swarms, but let us consider the result.

The first swarm comes off and leaves but few bees behind to create sufficient heat to develop the queen cells, and as more hatches he further reduces their number until the most critical moment arrives, when he "riddles" the hive of all the bees capable of creating any heat at all. Then the most forward cell hatches out, and this weak and worthless queen tears down all the other cells, becoming the mother of the hive. When cold weather sets in her bees are so constitutionally weak they cannot digest their food, and because he finds undigested grains of pollen he at once concludes that pollen alone is the cause of winter dysentery. Neither Heddon nor anyone else has ever hinted that the digestive organs of the bees were at fault.

The Rev. W. F. Clarke had noticed that if bees went to sleep, which he called "hybernation," they would winter all right, no matter how much pollen there might be in the hives; but he does not appear to have suspected that the manner in which queens are reared had anything to do with the matter, which he admits to be the case in the *Canadian Bee Journal*; nor does he seem to be quite certain that bees are as capable of hibernating as wasps, &c. The greatest opponent to Clarke's theory was Professor Cook, who is the author of a standard book on bees in America, and is looked upon as an authority on all entomological subjects. This gentleman very dogmatically asserted that "bees never hibernate," and stood on his "authority pedestal" as the foundation for his assertion; but as a witness is always cross-examined for the purpose of testing his credibility it is only fair to see if Cook is so good an authority as he would have us believe; hence I will quote from an article of his in the *American Bee Journal* for November 19th, 1884, page 748, which is on the Common Bumble Bees. He says this, "When the first bees come forth in the spring from extemporised cells, caused by eating holes in the pollen, the bees wax these cells and so form honey cells." As a matter of fact none of the bumble bees make "wax" or use it. They mix a paste of

honey and pollen, in which eggs are deposited, then the larvæ eat it, and when full grown they form a cocoon round themselves just where they may happen to be, which makes the combs resemble a bunch of Grapes. When the bees hatch out these vacated cocoons are used for storing honey just as they are. Before any are vacated, or if they are deprived of them, they construct cells for honey of pollen, but never of wax, as they are incapable of secreting it, these cells being afterwards eaten up by the brood. Thus it will be easy to gauge whether Professor A. J. Cook "kens all about bees."—A HALLAMSHIRE BEE-KEEPER.

(To be continued.)

EBOR BEE-KEEPERS' ASSOCIATION.

THE first annual Honey Fair and Exhibition of Honey for prizes of the Ebor Bee-keepers' Association was held by special arrangement in conjunction with the York Chrysanthemum Show, in the Fine Art Exhibition Building, York, on November 20th, 21st, and 22nd. The exhibits of comb and extracted honey were both numerous and excellent in quality. The schedule was divided into five classes, for which there were thirty-three entries. All the exhibits, without exception, were well got up. Those in every way worthy of special mention are—Mr. J. Yorke's twelve bottles of extracted honey, Mr. C. Atkinson's large collection of clover honey in bottles and sections, Mr. J. Davis's and Mrs. Kirk's heather honey in sections, and Mr. Marshall's extracted heather honey in bottles exhibited in his collection. During the three days of the Honey Fair about half the exhibits were sold. To add to the interest of the occasion a choice selection of frame hives and bee appliances was provided for inspection at the Honey Fair by the proprietor of the York and District Bee Appliance Stores and Honey Depôt, A. C. Jameson, who acts as Consulting Secretary and expert to the Association, and into whose hands was entrusted the management of the Honey Fair. Mr. W. Dixon, Belmont House, Beckett Street, Leeds, acted as Judge, and it is only fair to say that he was most careful and painstaking in making his awards.

The following is the prize list:—Class 1, for the best twelve 1 lb. glass jars or bottles of run or extracted honey—First, Mr. J. Yorke, Church Fenton, near Leeds, 10s.; second, Mr. C. Atkinson, Lockwith, York, 5s.; third, Mr. J. Marshall, Buckthorpe, 2s. 6d.; 4th, Mr. W. Richardson, Copmanthorpe, York; 5th, Mr. T. Shaw, Fulford, York.

Class 2, for the best six 1 lb. glass jars or bottles of run or extracted honey—First, Mr. C. Atkinson, Tockwith, York 5s.; second, Mr. W. Richardson, Copmanthorpe, 2s. 6d.; third, Mr. T. Shaw, Fulford, 1s. 6d.; 4th, Mr. J. Davis, Fulford; 5th, Mr. J. W. Richardson, Sheriff Hutton.

Class 3, for the best six 1 lb. sections of comb honey.—First, Mr. J. Shaw, Fulford, 7s. 6d.; second, Mr. C. Atkinson, Tockwith, 3s. 6d.; third, Mr. J. Davis, Fulford, 2s.; equal third, Mrs. Kirk, Stillington; 5th, Mr. W. Richardson, Copmanthorpe; 6th, Mr. J. Marshall, Buckthorpe.

Class 4, for the best and neatest exhibition of honey from one apiary.—First, Mr. C. Atkinson, Tockwith, 10s.; second, Mr. J. Marshall, Buckthorpe, 5s.; third, Mr. F. Baron, Askham Bryan, 2s. 6d.; 4th, Mrs. Kirk, Stillington.

Class 5, heather honey in bottles and sections.—Extra prizes awarded to Mr. J. Davis, Fulford; Mrs. Kirk, Stillington; Mr. O. Atkinson, Pateley Bridge.

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Bullfinches (J. T. E.).—Since requesting information from Mr. Hiam on his method of taking bullfinches you will probably have seen his communication on the subject (page 443) last week.

Chiswick Hybrid Tomato (Tomato Grower).—We are unable to inform you whether seed of this variety is ready for distribution or not. You can gain information on the subject by writing to Mr. A. F. Barron, R.H.S. Gardens, Chiswick, London, W.

Chrysanthemum Shows (G. N.).—We are obliged by your letter. In reporting shows endeavour is made to represent their general character, and specify the exhibits in the chief classes. It is wholly impossible to publish complete prize lists, however good the exhibits may be in several local or minor classes. For this reason cuttings from newspapers, which mainly consist of a long list of names, though we appreciate the kindness of the senders of them, are rarely serviceable.

Chrysanthemums at Chilwell (W. G. F.).—If you refer to page 417, our issue of the 14th inst., you will find that the extensive display in question has not passed unnoticed, and in any event what you send could not be published through the mistake you have made in writing on both sides of the paper. As a first attempt at writing for the press your communication is fairly good, but you will find that practice is requisite for placing you on a level with the best contributors to garden literature.

Artificial Manure for Fruit Trees (Manure).—The various artificial manures advertised are all good for fruit trees, as we have proved by experience. Thomson's Vine, Beeson's, Clay's, &c., with fish, native guano, and blood manures, may be mentioned as peculiarly suited to fruit trees. You could, not, however, have anything better than superphosphate and muriate of potash; 3 to 5 cwt. per acre of the former, and 1½ cwt. of the latter is a suitable quantity, and should be applied the first suitable weather after the middle of February.

Peach Tree for a Late House (G. H.).—If you want a variety to precede Sea Eagle, Late Admirable, and Lord Palmerston, you could not have a better than Barrington. As, however, Dr. Hogg, Royal George, and Bellegarde are objected to, it is probable that Barrington, though later, may also not be appreciated, as it is of the same character as those not desired; you may add Gladstone. Perhaps Princess of Wales would suit. It is earlier than Gladstone, very large and handsome; but of the two we should select the latter—viz., Gladstone. Prince of Wales has a bad constitution, and is similar to Barrington.

Roses for Wire Trellis in the Open, &c. (F. J.).—We presume you require varieties that are good for cutting, which the following have proved to be:—Climbing Pride of Waltham, salmon pink; Climbing Hippolyte Jamain, rose carmine; Climbing Jules Margottin, carmine; Climbing Captain Christy, flesh; Climbing Victor Verdier, carmine rose; and Gloire de Dijon. You could not select a worse time to move the Daffodils and Narcissus than when the growth is just showing above ground. Mark the roots, and lift them directly the foliage has died, or as soon afterwards as practicable, replanting with little delay. Clematis Jackmani will do fairly well on a north-easterly aspect.

Exhibiting Apples (G. D. C.).—You should have sent us a schedule, and we should perhaps have found something more having a bearing on the case than the three words you quote. Taking them alone we doubt if you could disqualify anyone for staging more than one dish, though the exhibitor could only be awarded the prize for the one the judges considered the best. If your Committee require one dish only from an exhibitor in the class it should be so stated in the schedule. Exhibitors ought not to be left in doubt on these matters. It is quite common to see more than one dish placed in competition by an exhibitor in such a class as you indicate, and under many schedules they are admissible. We have not seen yours.

Caterpillar in Apple Wood (F. J., Kettering).—The insect sent is the caterpillar of the Leopard moth (*Zeuzera aesculi*), which often burrows freely in the trunks and branches of a variety of trees. It is fond of the Pear, Plum, and Apple, and lives two years in the larval condition. Though some instances have been adduced to show that fruit trees attacked by this caterpillar occasionally bear more fruit than those that are uninjured, the final result is sure to be hurtful to the tree. The caterpillars may be killed or extracted from a tree by inserting bent wires in the holes, when these are of sufficient size, or if it be discovered while these are small a solution of soap or tobacco water may be thrown up by means of a syringe with a fine nozzle.

Repotting Vallota (F. G.).—The above, we presume, is the plant to which you refer. It will be best left undisturbed till spring, only giving sufficient water to keep the leaves fresh through the winter, an excess of moisture at the roots being injurious. If fresh soil is needed it may be given in the spring just when fresh growth commences. Good drainage is essential, and a mixture of turfy loam with a little leaf soil and crushed charcoal will be suitable. Press it down firmly in a pot only large enough for holding the roots comfortably, overpotting not being conducive to healthy growth and floriferousness. Some of the finest plants we know have remained in the same pots for five years. The plants require heat, moisture, and abundance of sun in summer for making free early growth, with a reduction in moisture during late summer for ripening that growth for flowering in the autumn.

Vines Infested with Mealy Bug (T.).—Cut all the Grapes with a piece of wood, and place in bottles of clear rain water with a few bits of charcoal in each, and keep in a cool dry place, placing the bottles in a slanting position so that the bunches hang clear of the bottles. They will keep quite as well in this way as on the Vines, and the latter will be clear for operating against the mealy bug. Get some cans full of rain water, those holding 3 gallons are best, and to every 3-gallon potful add a wineglassful of petroleum, and with this syringe the Vines thoroughly, wetting every part of the foliage, the rods, and woodwork of the house. Repeat in the course of four days, and again so soon as the leaves have fallen, which, as they drop, must be cleared

away and burned. It is necessary that the petroleum be kept thoroughly mixed with the water whilst it is being applied, which may be done by one person stirring sharply with a broom handle, whilst another person applies it to the Vines; or, if only one person performs the work, first fill the syringe and squirt a few times sharply into the watering-pot, and afterwards apply alternate squirts to the Vines and into the watering-pot. When the leaves are all off prune, and, removing the loose bark, wash the Vines with soapy water at 120° to 140°, employing 8 ozs. of soft soap to a gallon of water, and paint the whole of the woodwork of the house with petroleum, moving the plants out of the way; limewash the walls, and dress the Vines with some approved insecticide.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (G. S.).—The Pear is probably Comte de Lamy.

Bees Fanning (A Young Beginner).—There is nothing extraordinary in the bees fanning during exceptionally fine weather. Bees were not only carrying much pollen, but sometimes a little honey. Our own bees have been fanning a good deal lately, arising from their good condition, and from what is stated above. In addition to that, bees fan when queenless. As yours carry much pollen it does not indicate that; still, it is not a true criterion to judge by. They act similarly when the queen is unfertilised, and also at a certain stage when foul brood is present. You give no information about the odour from the hive, whether it be sweet or offensive; if the latter you may be sure something is wrong, and if on examination there be sealed and unhatched brood cells, the contents of which are of a brown colour and of a gluey nature, transfer the bees to a clean hive, and after forty-eight hours transfer again into another full of clean combs. As you are a beginner, however, you may not have these at hand; if so wait till say February, turn the bees into an empty hive, then after forty-eight hours into one filled with comb foundation and feed them. The pigstyes can have no ill effect on bees, but the hive should be covered somewhat in addition to outside case. You do not say what time has elapsed since the bees were brought home. Nothing excites foul brood so readily as overheating, and had the same pains been taken to initiate beginners with that fact, instead of assumptive evidence of certain cures, we would not be hearing so much of the plague.

COVENT GARDEN MARKET.—NOVEMBER 27TH.

MARKET very quiet, with good supplies. Prices unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2	0	to 7	0	
„ Nova Scotia and					
„ Canada, per barrel	15	0	25	0	
Cherries, ½ sieve	0	0	0	0	
Grapes, per lb.	0	6	3	0	
Lemons, case	10	0	15	0	
Oranges, per 100	4	0	to 9	0	
Peaches, dozen	0	0	0	0	
Plums, ½ sieve	0	0	0	0	
Red Currants, per ½ sieve	0	0	0	0	
Black	0	0	0	0	
St. Michael Pines, each	2	0	6	0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0	to 5	0	
Asparagus, bundle	0	0	0	0	
Beans, Kidney, per lb. ..	0	2	0	0	
Beet, Red, dozen	1	0	2	0	
Broccoli, bundle	0	0	0	0	
Brussels Sprouts, ½ sieve	1	6	2	0	
Cabbage, dozen	1	6	0	0	
Capsicums, per 100	0	0	0	0	
Carrots, bunch	0	4	0	0	
Calliflowers, dozen	2	0	4	0	
Celery, bundle	1	0	1	3	
Coleworts, doz. bunches	2	0	4	0	
Cucumbers, each	0	3	0	6	
Endive, dozen	1	0	0	0	
Herbs, bunch	0	2	0	0	
Leeks, bunch	0	2	0	0	
Lettuce, dozen	0	9	to 1	3	
Mushrooms, punnet	1	6	2	0	
Mustard & Cress, punnet	0	2	0	0	
Onions, bushel	3	0	4	0	
Parsley, dozen bunches	2	0	3	0	
Parsnips, dozen	1	0	0	0	
Potatoes, per cwt.	4	0	5	0	
„ Kidney, per cwt.	4	0	7	0	
Rhubarb, bundle	0	2	0	0	
Salsify, bundle	1	0	1	6	
Scorzonera, bundle	1	6	0	0	
Shallots, per lb.	0	5	0	0	
Spinach, bushel	0	1	0	2	
Tomatoes, per lb.	0	4	0	6	
Turnips, bunch	0	4	0	0	

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 12 blooms ..	3	0	to 6	0	
Asters, per bunch, French	0	0	0	0	
Bouvardia, bunch	0	6	1	0	
Camellias, dozen blooms	1	6	4	0	
Carnations, 12 blooms ..	1	0	2	0	
Christmas Roses, 12 blms.	1	0	2	0	
Chrysanthemums, dozen	0	6	3	0	
„	3	0	9	0	
Dahlias, dozen bunches ..	2	0	6	0	
Epiphyllums, doz. blooms	0	6	0	9	
Eucharis, dozen	2	0	5	0	
Gardenias, 12 blooms ..	3	0	5	0	
Gladiolus (various) dozen	1	0	1	6	
„	1	0	1	6	
Hyacinths (Roman) dozen	0	6	1	6	
„	1	0	2	6	
Lapageria, 12 blooms ..	1	0	2	6	
Lilium, various, 12 blms	2	0	4	0	
Lilium longiflorum, 12	3	0	6	0	
„	3	0	6	0	
Maidenhair Fern, doz.	4	0	9	0	
„	2	0	6	0	
Marguerites, 12 bunches	2	0	6	0	
Mignonette, 12 bunches	2	0	to 4	0	
Myosotis or Forgetmenots	1	6	3	0	
„ doz. bunches	1	6	3	0	
Narcissus (Paper-white),	1	0	1	6	
„	4	0	9	0	
„ French, 12 bunches	4	0	9	0	
Pelargoniums, 12 trusses	0	9	1	0	
„	3	0	6	0	
„ scarlet, 12 bunches	3	0	6	0	
Primula (double) 12 sprays	1	0	1	6	
„	0	9	1	0	
„ (single) 12 sprays	0	9	1	0	
Roses (indoor), dozen ..	0	6	1	6	
„	3	0	6	0	
„ Mixed, doz. bunches	12	0	13	0	
„ Red, dozen bunches	1	6	2	0	
„	1	6	2	0	
„ Tea, white, dozen ..	1	0	3	0	
„ Yellow	2	0	4	0	
„ French, per bunch ..	2	0	3	6	
Spirea, dozen bunches ..	0	0	0	0	
Stephanotis, doz. sprays	4	0	6	0	
Sweet Peas, doz. bunches	0	0	0	0	
Tuberose, 12 blooms ..	0	6	1	0	
Violets, dozen bunches ..	1	0	2	0	
„ French, per bunch	1	3	2	0	
„ Parne, per bunch	3	0	4	0	
White Lilac, Fr., per bunch	6	0	7	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
<i>Aralia Sieboldi</i> , dozen	..	6	0	to 12	0	<i>Ficus elastica</i> , each	..	1	6 to 7	0	
<i>Arum Lilies</i> , per dozen	..	9	0	12	0	<i>Foliag. plants, var.</i> , each	2	0	10	0	
<i>Arbor vitae</i> (golden), dozen	6	0	24	0	0	<i>Hyacinths</i> (Roman), 12 pcts	9	0	15	0	
<i>Begonias</i> , various, per doz.	4	0	12	0	0	<i>Geraniums</i> , Ivy, doz.	..	0	0	0	
<i>Balsams</i> , per dozen	..	0	0	0	0	<i>Lobelia's</i> , per dozen	..	0	0	0	
<i>Caladiums</i> , per doz.	..	0	0	0	0	<i>Marguerite Daisy</i> , dozen	6	0	14	0	
<i>Calceolaria</i> , per dozen	..	0	0	0	0	<i>Mignonette</i> , per dozen	..	0	0	0	
<i>Christmas rose</i>	..	0	0	0	0	<i>Musk</i> , per dozen	..	0	0	0	
<i>Chrysanthemums</i> , dozen	6	0	15	0	0	<i>Myrtles</i> , dozen	..	6	0	12	0
<i>Dracena terminalis</i> , doz.	24	0	42	0	0	<i>Palms</i> , in var., each	..	2	6	21	0
<i>Dracena viridis</i> , doz.	..	12	0	24	0	<i>Pelargoniums</i> , scarlet, 12	0	0	0	0	0
<i>Epiphyllum</i> , per doz.	..	12	0	24	0	<i>Primula</i> (single) per doz.	4	0	6	0	0
<i>Erica</i> , various, dozen	..	12	0	18	0	<i>Rhodanthe</i> , per dozen	..	0	0	0	0
<i>Euonymus</i> , var., dozen	6	0	18	0	0	<i>Saxifraga pyramidalis</i> ,					
<i>Evergreens</i> , in var., dozen	6	0	24	0	0	per dozen	..	0	0	0	0
<i>Ferns</i> , in variety, dozen	4	0	18	0	0	<i>Solanums</i> , per dozen	..	6	0	12	0



THE FLOCK IN WINTER.

LAMBING TIME.

"LUCK in lambing!" Yes, this is the term so frequently heard among shepherds and farmers, and whenever we hear it we feel tempted to ask, What has luck to do with it? For we certainly cannot agree with the popular but fallacious idea that a certain per-centage of loss of ewes in lambing is inevitable. The flock of the home farmer should consist of choice ewes, home bred, within age, and selected with due care and judgment, and in such a flock under good management a loss is quite exceptional. But if the flock is made up with ewes of all ages, with a large proportion of full-mouthed ewes, or, as is so often the case, with a good many over-age, then there is a proportionate increase in the risk of losses.

So much depends upon the shepherd; aye! and upon the shepherd's master too. A lazy shepherd will often harrass the sheep by a too free use of his dog, and quiet gentle treatment is of especial importance. We have pointed out the evils attendant upon folding ewes upon Turnips now, and we would again urge the importance of shelter, quiet, and judicious feeding. The sheep will soon show us how much they appreciate shelter if we only give them an opportunity of doing so. Turn them out on a bleak plain on a cold wet night, and if there is any possibility of shelter from tree belts they will take full advantage of it. Often have we in these articles recommended the erection of open sheep lodges for shelter on pasture, because we know the outlay to be a sound investment, tending, as it does, to preserve the sheep from harm. Can any reasonable person see ewes in the wretched plight they are so frequently in during the present month—drenched by cold pelting showers while standing in a sea of mud—suppose it possible for them to continue healthy, or, at any rate, to pass through the strain of such exposure without suffering? What is the result of such ill treatment but that heavy loss of ewes and lambs which is attributed to bad luck? Let there be an end of such stupidity, and let sheep have the shelter they require equally with all other animals of the farm.

As the lambing begins the ewes are brought close to the fold or lambing yard, and we always hold the pasture near the fold in reserve for this purpose. Each ewe with its progeny to a separate pen, in order that it may not only have shelter, but be sufficiently under the shepherd's eye for him to see if all is well, or if any special treatment is required. The lamb may not suck aright, the ewe may not "take to it" as she ought, she may be deficient in milk, and the lamb may require aid from the shepherd's milk bottle. Each case must be treated upon its merits, strong ewes and lambs being turned out of the pen after a few hours, others requiring special care being kept there just so long as is necessary.

There should always be enough space in the fold to take in the

entire flock without crowding. The earliest lambs with the dams are out upon open pasture upon all fine days, but there must be no risk run by exposure on very cold days or nights. One can hardly understand the folly which suffers lambs to be exposed to weather which is likely to hurt them, yet it is a most common thing to hear of losses arising from such carelessness.

If the flock has the taint of foot rot every case must be taken in hand at once, and persistently. It is lamentable to see the lambs suffering from this infectious disease, for they then soon fall off in condition. A judicious master will see his interest in allowing ample help to the shepherd at this critical time, and not press so much work upon him that negligence in something or other is inevitable. Keep the shepherd with his flock, and let roots, fodder, and all other things required be taken to him regularly, and then insist upon full attention being given by him to every animal under his charge. When a flock goes wrong the shepherd is blamed, but depend upon it his master is also in fault. Self interest or the sense of duty should suffice to bring every fault or falling off under the master's eye before the evil has become serious; but when one sees ewes lame by the dozen, with many of the lambs limping too, it may be taken as a sure sign of carelessness that is quite inexcusable.

WORK ON THE HOME FARM.

With a continuance of such fine mild open weather all work on the land should be finished as speedily as possible, not a day being taken for any other purpose. To glance at sound practice, all land was ploughed as the stubbles became clear, and dropped corn eaten by sheep, pigs, or turkeys. On heavy land we began autumn sowing immediately after harvest, or rather when the first stubbles were cleared. First came *Trifolium incarnatum*, then Rye, followed closely by winter Oats, Tares, Beans, and Wheat. With such work well in hand Mangolds and Swedes were got up, carted and clamped as growth ceased. We never had better weather for clearing the roots. The crop was exceptionally heavy, but the land was so dry and firm that carting was comparatively an easy business, one horse doing work that requires two in a wet season. So far all went well, but a wet October caused a temporary cessation of such work, and there was the usual outcry from laggards about arrears of work, very little land ploughed, no sowing done, and only part of the roots cleared. But do not let us forget that these are the men who make such an outcry about hard times.

We do not like to be hasty in bringing corn samples on the market, and Barley especially may be threshed at a loss. It is now well out of the sweat which occurs in every Barley stack, and threshing is being done gradually so as not to overfill the cleaning floor. There is considerable difference in the way in which various threshing machines screen corn, and all good malting Barley should be screened once or twice after it is threshed. In selling Barley colour stands first, next comes condition, substance, and purity of sample, freedom from tail corn, and any discoloured grain. Every point tells, and we know no better investment than the purchase of a thoroughly good new corn screen, through which we frequently pass Barley twice, if it appears worth the labour involved in doing so, thorough screening often making a difference of several shillings per quarter in the price. We lay particular stress upon screening Barley, but the plan answers for all corn that is well grown and well harvested. High-class malting Barley is comparatively scarce, and the best samples command special prices altogether above ordinary quotations. The yield per acre is low, the average being very little above 26 bushels per acre, and there are crops so poor that they will not realise anything like the expense of cultivation.

METEOROLOGICAL OBSERVATIONS.

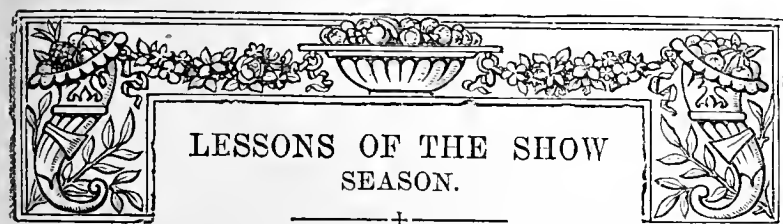
CAMDEN SQUARE, LONDON.

Lat. 51° 37' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. November.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	in.	
Sunday	17	30.333	49.8	49.7	N.E.	47.4	51.3	49.2	54.0	46.0	—	
Monday	18	30.689	48.1	47.0	S.	47.9	51.3	47.8	54.1	46.9	—	
Tuesday	19	30.680	44.5	41.6	E.	47.6	45.3	44.0	48.3	43.1	—	
Wednesday ...	20	30.633	42.2	40.1	N.E.	46.4	43.0	41.3	43.9	41.2	—	
Thursday	21	30.548	38.0	38.0	N.W.	46.9	45.6	37.6	47.9	37.3	—	
Friday	22	30.408	43.2	44.8	S.E.	44.4	51.2	35.9	52.6	31.8	—	
Saturday	23	30.282	50.5	49.7	S.	45.4	53.5	41.3	54.9	47.3	0.119	
		30.552	43.6	44.4		45.6	48.7	42.9	50.3	40.3	0.119	

REMARKS.

17th.—Wet mist nearly all day. 18th.—High fog early, dull day. 19th.—Cloudy, but dry. 20th.—High fog or smoke cloud rendering gas necessary, except for a few hours at mid day. 21st.—Dull and dark. 22nd.—Dull and mild. 23rd.—Dull and mild. A very dull week, with high barometer, small daily range, and scarcely a gleam of sun. The rain on the 23rd was the first since the 3rd, the fall on the 16th being merely the product of wet fog.—G. J. SYMONS.



LESSONS OF THE SHOW SEASON.

DURING the past month Chrysanthemum shows have occupied a large share of horticultural attention, and a proportionate space in gardening periodicals has been devoted to the records of proceedings; the rush is now over, and with the exception of a few annual meetings, the horticultural season of special activity may be considered as ended. This is a good opportunity to look back and see what has been accomplished, what fresh ideas have been carried into practice, what lessons have been learned, in fine, to judge the practical results of time employed and the energy expended. A very cursory review gives much that is noteworthy and satisfactory, encouraging to those who have been engaged in the work in any capacity, and gratifying to the interested onlookers, who may have contributed to the funds utilised in the promotion of a healthful competition. I have for some years had ample opportunities of judging the results of shows generally, and these autumn exhibitions will compare most favourably with any others in their usefulness and importance. They have been largely the means of extending and improving the culture of a plant that is invaluable in all respects owing to the season at which it flowers and its adaptability for decorative purposes, and in this alone they have performed a service of no mean importance. Beyond that, however, they have afforded opportunities for meetings amongst gardeners at a most convenient time, the interchange of ideas, mutual assistance in the solution of difficulties, and the general advantage that invariably arises from the association of men concerned in one occupation. The stimulus, too, induced by the competition at such meetings has a beneficial effect, encouraging greater efforts in what happily is almost invariably a generous rivalry, and producing effects far beyond their immediate cause. It certainly cannot be said that all the best gardeners are exhibitors as some are prevented by various reasons from entering the lists; but amongst the successful exhibitors in specialties like the Chrysanthemum will be found a large proportion of thoroughly competent all-round practitioners, their achievements in one department being merely indications of their general skill. This opinion is founded upon years of observation and a wide circle of gardening friends in all parts of the country. Plenty of examples could be given in proof of the statement, but it would be invidious to signalise a few amongst so many of equal merit.

There are several other matters in connection with these shows requiring a little attention, that may be regarded as "lessons of the season," and the first to which we may devote a little consideration is the grouping of Chrysanthemums or arrangement for effect. In thousands of conservatories throughout November and a part of December the chief portion of the floral display is formed by Chrysanthemums, and in their disposal to produce the most pleasing results considerable diversity of taste prevails. The most common way is to place the plants in a semicircular block, the shortest in front and the tallest at the back to form a sloping bank, the arrangement of colour and the quality of the blooms being relied upon for the desired effect. This plan is generally carried out at shows, and it must be admitted that rich and telling groups are so produced; still from an artistic point of view they are commonly unsatisfactory, formal, heavy, and monotonous. Farther, when the marginal plants are not sufficiently dwarf or well clothed with foliage the spectator has a dreadful array of pots, bare stems,

and stakes presented to his view, certainly not calculated to awaken his admiration. A knowledge of these defects has led the committees of several societies to permit the introduction of foliage plants as a belt to the groups, which in several cases (especially so at Hull) has been found to be a useful addition, but the idea requires to be extended in its operation.

The Brighton summer shows have long been celebrated for their groups of Ferns, and it is evident that some exhibitors in that district possess excellent taste in the arrangement of plants. At the last November Show in the same town attempts were made to introduce a little diversity in the groups of Chrysanthemums, and though only those plants were employed in the principal classes provided in the schedule, the general style was more varied and tasteful than is usually seen at exhibitions, the sloping bank pattern being departed from in several instances with good results. But a non-competing group, contributed by Mr. Miles, the execution of a suggestion by Mr. Mark Longhurst, was a departure from stereotyped methods of arrangement that deserves notice and imitation. The group was only a small one, and on a larger scale the principle could have been more effectively developed, but there was sufficient to show what can be accomplished in arranging Chrysanthemums with other plants. The charming method of grouping miscellaneous plants, adopted with so much success by Mr. W. Brown of Richmond, Mr. Brückhaus of Maida Vale, and Mr. Hudson of Gunnersbury, is familiar to metropolitan horticulturists, a low groundwork being formed of Ferns and similar plants, from which rise graceful Palms, Crotons, Dracænas, and such flowering plants as may be available constituting the chief features. In numerous districts the old formal "banking" style of grouping has become obsolete, mainly in consequence of competition with the more artistic style mentioned. The Brighton group was formed on the same plan. The foundation consisted of Ferns, small foliage plants, &c., with a few taller Palms, and then dwarf light graceful Chrysanthemums were introduced with excellent effect. Comparatively few were employed, but the colours were well selected, Japanese varieties being the most telling, and the result was all that could be desired. A class could be advantageously introduced in many schedules for such groups, and it would permit numbers of gardeners to compete who cannot stage a large collection of Chrysanthemums alone. It would have a tendency to improve the general taste in arrangement, and in any case would be a welcome addition to the other classes where there is plenty of space at command.

Another department of Chrysanthemum shows is rapidly increasing in importance and utility—namely, that devoted to floral decorations. A surprising example of what can be secured in this way was afforded at the National Society's Westminster Exhibition on November 12th and 13th, when, as an experiment, a special class was provided. This, the schedule stated, was "for a table of bouquets, wreaths, sprays, buttonholes, &c., &c., illustrating the decorative purposes to which Chrysanthemum blooms can be applied. Any appropriate foliage may be employed. Each exhibitor restricted to a table space not exceeding 6 feet by 3 feet." The prizes were small in amount, yet there were five exhibits of an exceptionally tasteful character, occupying a space of 30 feet run of table, a result which must have far exceeded the expectations of the projectors. Nothing could have better proved the adaptability of Chrysanthemum blooms for decorative purposes than these contributions, and while they showed what can be done, they also taught what should be avoided, a "lesson" that some of the competitors, as well as many of the visitors, who were specially interested in it, will take to heart.

Several interesting points were illustrated in the competition, and though everyone knows full well the decorative value of Chrysanthemum flowers, yet it is seldom that we see such admirable examples of their tasteful employment as were afforded in the class under notice. One fact attracted attention immediately—namely

that Japanese varieties were almost exclusively used, and of these only the lightest and most distinct in shape and colour. In the best arrangements the first object is to avoid heaviness, and unfortunately the incurved Chrysanthemums, unless very sparingly employed, are very likely to convey the impression of undue weight. A solid, heavy bouquet, basket, or stand is highly unsatisfactory, however well the colours may be harmonised or contrasted. The admission of other foliage is an important gain in this form of decoration, and full advantage was taken of the privilege at Westminster, Adiantum fronds, Ivy sprays, Berberis leaves, &c., being freely used with good effect. To these were also added Grasses in several cases, and in one Orchids were also introduced. This gave rise to some discussion, as it was thought to be contrary to the spirit, if not to the letter, of the schedule conditions. The referee, however, ruled that other flowers could not be excluded in the absence of any express statement to that effect, and further that as the object was to show what could be accomplished with the Chrysanthemum from a decorative point of view, the employment of other flowers was really helping in that direction. It is so obvious, however, that with foliage and Grasses such charming designs can be produced by Chrysanthemums, unaided by other flowers, that it might be desirable to restrict the class to them, specially indicating also what would be required from each exhibitor, so that all would be placed on equal terms, except as regards the material and the mode in which it is utilised.

For stands and baskets Chrysanthemums are well suited. Of the former one of the best I have seen was that which gained Mr. Crane the premier prize at Westminster, a graceful lightness combined with good colour effect being produced. Some of the baskets in the class just referred to were excellent from Messrs. Perkins and Son, who also had a most elegant design of the same character at Rugby. Bouquets of these flowers are commonly very unsatisfactory—crowded, flat, heavy, and altogether graceless productions; yet the Coventry firm with others have shown what can be accomplished, and both at Kingston and Rugby I saw some of these bouquets that were quite equal in taste of design and execution to some of the best bride and ballroom bouquets composed for sale or exhibition by the leading firms. Both Mr. Chard and Mr. Brown have given the public abundant examples of their skill in general floral arrangement, but neither has yet done himself full justice amongst the Chrysanthemums. Perhaps with more encouragement in the shape of prizes we may see them and others induced to exert their best efforts. Mr. Newman has already proved what can be accomplished in this way, and frequently stages bouquets of the best taste. Wreaths vary greatly in their style, but the general faults are unnecessary size and heaviness. Purity of flowers is an important point in wreaths, and the introduction of colours, either in flowers or foliage, requires great care, or the whole is readily marred. For instance, one exhibitor of a well-constructed wreath of white Chrysanthemums sought to improve it by regularly dotting it with brightly coloured Ampelopsis Veitchii leaves, a mistake of which he subsequently became fully conscious.

Dinner tables are frequently adorned with Chrysanthemums at this time of the year, and it is not surprising, therefore, that classes should be provided for this form of decoration. It must be acknowledged, however, that the results are too often disappointing. At Hull some seven or eight large tables thus decorated were arranged, but they were all defective in some particulars. White flowers had been too liberally or exclusively employed in the majority, consequently there was a want of character that under artificial light had a very tame and dull appearance, or, as one expressed it, "They were quite funereal." Others had introduced yellow or bronze varieties, but spoilt their designs by having heavy central stands, altogether too obstructive. Some of the rich golden, bronze, red, and crimson Japanese have a grand effect under gaslight, and if a few white varieties are used judiciously with them delightful effects can be obtained. Two of the best tables in this way I have seen all the season were at St. Neots, where some extremely rich

colour arrangements were produced with a few flowers and varieties without having a miscellaneous assortment of discordant tints.

Respecting the cut blooms in competition, the varieties best represented, and the novelties that have come to the front, a few notes will be contributed on another occasion, when some other "lessons of the season" will be indicated.—LEWIS CASTLE.

KEEPING PEARS.

INSTRUCTIONS in growing Pears to the highest perfection are frequent in these pages, but how to preserve the fruits in the best possible condition after they are gathered until they are fit for the table or market is a subject that is rarely dealt with. It is, however, an important one, and worthy of our best consideration, therefore a few notes on this subject may not be out of place at the present time.

Late Pears that cannot be given special positions on walls in some of the eastern, midland, and all the northern counties do not perhaps attain the same perfection before they are gathered as they would if they could be given more favourable positions, and consequently, shrivel, either partially or wholly, before they are ripe. Many of them shrivel only towards the stem, and although little fault can be found with the flavour generally they are inferior in appearance. That best of all Pears, perhaps, Marie Louise, with us when grown on trees in open quarters always shrinks towards the stem, even in the best of seasons—that is, when given the general treatment accorded Pears after they are gathered. They continue to be green in appearance, and not to assume that rich yellow colour characteristic of those grown on south walls or under glass, and are ripe soon after they are gathered. Open trellis shelves arranged one above another in some room or shed are not suitable for Pears. To colour Pears well and prevent shrivelling they should be stored where they can be kept practically air-tight. The majority of rooms are too airy and too dry, and how to overcome these evils may not have occurred to the majority. At any rate a good number of fruits may be spoiled before the best means of keeping them has been found. The best method of carrying out this work is to have in readiness a good number of boxes made of half-inch boards, boxes that will hold four or five dozen fruits, but larger or smaller boxes may be used. We have some containing no less than thirty dozen, but these are too large. Unless sufficient Pears of one variety are at hand to fill them they give more trouble than would be occasioned by a smaller size. Then, again, when large boxes are filled too many fruits ripen at one time to be of use unless they are required for the market.

The fruit when gathered must be properly dry, and sorted in three sizes—first, second, and third. The two first can be packed alike, and the last as well as all small-growing varieties on a slightly different principle. The lids of the boxes may be fastened with wire secured on the top of the box lid on each side, and then passed through a small wire staple at each side of the box. By this means they are more easily examined than if the lids are nailed down. Nothing surpasses paper shavings for packing Pears in. Hay and straw are too heating, especially if in large boxes. At any rate they are likely to be slightly flavoured with these materials when removed. Place a good layer of shavings at the bottom of the box, and then a layer of fruits each packed in a separate piece of paper. Over these place a layer of paper shavings, then another layer of fruit, and so on until the box is full. Two layers of paper can be placed over the top, the box being full and the lid secured. The variety, time of gathering, and whether first or second size, as well as any other particulars, should be placed on a label and tacked to the lid. This saves considerable trouble afterwards. When it is necessary to fill one box with two varieties, those that ripen about the same time should be selected, and a label placed at each end of the box. The third size and fruits of small growing varieties are packed in the same way, except placing them singly in paper. Over the first layer of shavings a sheet of paper is laid, and then a layer of fruit, another sheet of paper, then shavings, and so on. When all have been stored in boxes they can be arranged in any cool room or shed. Those that ripen first should be placed on the top, or where they can be reached without disturbing the others. The first and principal labour is in making the boxes, but they last for years. Those in the neighbourhood of towns will have no difficulty in procuring suitable boxes, chiefly from grocers and provision dealers, or better still are the boxes in which the French send their Pears. The labour of storing Pears in boxes is considerably more than placing them on shelves, but if the fruit is worth growing well it is also worthy of being stored, so that it can be presented in the best possible condition when ready for use.

Those who have never stored Pears on this principle may upon first examining the contents of the boxes be somewhat alarmed at finding the paper and shavings thoroughly damp, which they are certain to be. Some of the fruits in our large boxes were quite moist the other day. This is one reason why we object to too large boxes. No harm appears, however, to result, although we do not like to see them too moist. The fruits when stored in boxes keep plump and colour beautifully. There are very few Pears that refuse to colour if properly treated.

By this process many varieties colour well while the flesh remains firm, and we are convinced that they are improved in flavour by placing them in a warm room during the last stages of ripening. When the fruit is wanted, or some of it, to maintain a succession it can be placed in a warm room after they have been in boxes about a week or so, according to the variety. *Beurré Rance*, *Bergamotte Esperen*, *Josephine de Malines*, and other late varieties should not be hurried.—WM. BARDNEY.

HARDY PLANT NOTES.

HELLEBORES.—The majority of persons who possess handsome specimens of these plants will be looking forward to the annual display of their welcome flowers, the better forms of which are so justly prized at this season of the year. The thought of attempting to transplant the roots at this time would undoubtedly appear somewhat ridiculous, as no doubt it would be to some extent were it recommended generally; but it is not, nor is there any occasion to disturb these specimens so long as the possessor is certain that they have plenty of suitable soil for their requirements, and the plants themselves by the luxuriance of their foliage and the abundant supply of their flowers afford ample proof that they are in good condition. But what I have to say just now about these very desirable plants is more especially directed to those who may be thinking of making new plantations, and my advice is to plant at once and not delay till the arrival of spring, a season, that suits many of our best hardy plants admirably, but is altogether wrong for the "niger" section of this family, and particularly does this apply to all those localities where the soil is light or sandy, or, what is equally bad, a soil which for summer is overdrained.

Though not particular as to soil itself, these Hellebores are most happy in rather heavy loamy land, the depth of which cannot be too great, and finally a cool moist position where a free circulation of air is continually going on. Some few years since the whole of our Hellebores were planted on one of the open quarters, and though cared for as well as circumstances would permit, their appearance indicated that the position was unsuitable, but better quarters were obtained for them, and they now grow in luxuriance between hedges of Oval-leaved Privet, well repaying by their rapid increase. The full heat of summer sun they cannot endure, nor do they require the incessant cold and shade that a 9-inch wall affords. The shelter and shade they need is only partial, and should be afforded them by evergreen hedges wherever possible. This kind of protection is of great benefit, and in many instances our plants which are nearest the hedge, in spite of the latter robbing the soil by its mass of roots, as well as keeping off the rain, are decidedly more vigorous and the foliage more abundant than are those plants 5 feet away, and which have in consequence a far greater share of summer sun than those nestling at the foot of the hedge.

From these facts, then, it may be gleaned that a partially shaded spot is what they thoroughly enjoy, and such a one could, if sought after, be found in almost any garden; for a couple or three shrubs or Conifers would supply the need if properly placed, and what more beautiful or useful than large handsome patches of these old-fashioned perennials? Not only does the foliage appreciate protection from sun and heat, for the roots also are equally fond of moisture, or, more correctly, of being continually cool, to ensure which some amateur growers bury blocks of sandstone in the soil. But while admitting the great benefits accruing from such treatment, I fear it is too elaborate for the majority of those who grow Christmas Roses. Three feet depth of well enriched soil they fully value, and for dry, hot, much drained soils, cow manure may be employed freely, keeping it a few inches below the roots at planting time. No period is equal to the early autumn months for planting, and the earlier the better, thereby insuring as many newly formed roots as possible. When well established, these plants are much benefited by bountiful supplies of liquid manure in autumn and winter. I much prefer giving it to them at this time when the soil generally is well charged with moisture, for then it lies about the surface and descends gradually to the roots below; while, if given in summer time, it quickly passes through the soil, and affords little or no help to the plants themselves. It is worthy of note that the varieties of *Helleborus orientalis*, as also *H. colchicus*, *H. anti-*

quorum, *H. guttatus*, and *H. purpurascens*, do not suffer in the same degree either from the effects of sun or from spring planting as the varieties of Christmas Rose, and may therefore be planted in more open positions, and over a more extended period, without incurring any risk. Many of this last-named section have very handsome foliage, which, coupled with their more or less beautiful and curious flowers, are always productive of good effect in the herbaceous border, the rockery, or the shrubbery.

HERBACEOUS PÆONIES.—These afford another illustration wherein autumn planting is essential to success, and all who desire the best results should make a point of early autumn planting for all Pæonies. More especially should this fact be impressed upon all who take an interest in these plants, for the reason that they take longer to establish than any other hardy perennials. Those which have made 6 or 8 inches of young growth are often planted, but alas! for the results, for not only is that season's growth lost, but the plant is also much weakened, and the ensuing autumn will disclose, if an examination be made, nothing but weak thin looking buds in place of the large plump buds which may have been had autumn planting been resorted to. Few plants are less trouble than these Pæonies when once established, and they may remain for an indefinite period in the same position, and increase in size and beauty annually. A little extra pains with them at planting time is not, therefore, of great moment when it is considered that they are safe for ten or a dozen years without replanting; indeed, I know an instance where a plant of *Triomphe de Paris* has stood for nearly twenty-five years, and every season it is quite a feature, fully 4 feet through, and producing abundance of its lovely fragrant flowers. It is when seen thus that some idea of their value is obtained. All they require is a deep and rich soil. Secure good plants with well developed crown buds, and plant in autumn. All the after attention they require is an annual mulching of manure, or plenty of liquid manure in the autumn and winter. In the event of mulching be careful not to injure the buds, as these show rather prominently above the surface in some kinds even in winter time after they have been planted a couple of years.—J. H. E.

SALT AS A MANURE.

MR. RIVERS need not fear that a moderate dressing of salt will injuriously affect his Plum trees, or, in fact, any other plant. The vegetation of Mount Edgecombe, the sheltered gardens of Falmouth, Penzance, Tresco, in the Scilly Islands, and Jersey, which are protected from the direct action of the saline spray, prove conclusively that a soil containing a large proportion of salt deposited from the saline atmosphere is not injurious to vegetation, but on the contrary, is compatible with the most luxuriant growth.

On the coast line, and for as far inland as the saline atmosphere is carried by the winds, the application of salt would be unnecessary, but further inland the soil may not contain sufficient soda, and perhaps chlorine, for the requirements of some plants. I know no reason why salt (chloride of sodium) should benefit Plum trees, but I cannot speak positively, as I have been unable to find an analysis of either the wood or the foliage; these may contain such a proportion of soda as would show that the application of salt is useful. But, on the other hand, most complete analyses have been made of the fruit; these indicate that potash is the proper manure for Plum trees, for the ash of the fruit contains 59 per cent. of potash and only $\frac{1}{2}$ per cent. of soda, an exceptionally small proportion of that element. All plants contain more or less of soda. The ashes of the fruit of the Apple, Fig, and Strawberry an unusually large proportion, averaging about 27 per cent.; of the Pine and Gooseberry about 10 per cent.; therefore these fruits are benefited by moderate dressings of salt. Asparagus, Beet, Radish, and Rhubarb all contain a very large proportion of soda. Carrot, Lettuce, Parsley, Vegetable Marrow, Hyacinth, and Primula more than an average proportion, consequently salt is indicated as a suitable manure for them. Many other plants might be specified to which salt is useful, but these are sufficient for the purpose of illustration. Overdoses of salt are destructive to vegetation, so are overdoses of guano, the value of which as a manure no one will dispute. Salt by itself in the absence of one or more of the elements necessary for plant growth is useless. Every plant requires certain proportions of potash, soda, lime, magnesia, iron, phosphorus, sulphur, silica, chlorine, and nitrogen; all these must be present in the soil in such proportions as each plant requires for the purpose of perfect growth. Ville has stated that all soils contain sufficient of all of them except potash, lime, phosphorus, and nitrogen, and limits his formulas of artificial manures to these, but Dr. Griffiths has proved conclusively that iron, in the form of the sulphate, may be added to artificial manures with very great advantage to the crops. Others have proved that the manurial value of soda and magnesia is in certain cases very

great, from which it may be fairly concluded that to attain the best results from artificial fertilisers it is desirable to make them as complete as possible, proportioning the ingredients, where we have reliable analyses of the plants or soil, according to the special requirements of the former and the deficiencies of the latter.—EDMUND TONKS.

OUTDOOR PEACH CULTURE.

I HAVE often heard it said that if we want a Peach of first rate flavour it must come from trees grown on the open walls. I believe many others are of that opinion, myself included. Trees grown under glass with special treatment possess one great advantage over those grown outside in more certainty of a crop and perhaps larger fruits; but briskness of flavour as well as colour and firmness of flesh are often wanting, and which even the orchard house, at one time so popular, fails to supply. My object here is not to induce people to ignore growing Peaches under glass, which is a most commendable plan for lengthening the season of production, but I cannot help thinking that outdoor cultivation of Peaches has been too much neglected and in some cases discontinued without sufficient reason. I see no other cause for this apathy than that our fickle climate and short and sometimes sunless seasons militate so much against the certainty of a crop. I hope some day to see a little more attention paid to the old system of Peach growing, and more of our garden walls adorned with this delicious fruit.

There is no lack of good sorts to back up the effort that have stood the test of time, and which to this day may be produced as good and luscious as ever they were. It is only to go about the work in the right way by securing a good rooting medium, favourable aspect, and plenty of wall space, together with plodding attention, patient training, and pruning with sound judgment so as to admit all the light and air to the trees, and beyond all to keep them free from injurious insects and mildew. Beyond this, however, the comparative tenderness of the Peach tree suggests a proper system of protection from spring frosts, for be the situation ever so favourable our climate is too fickle to run the risk of doing without it.

Coming first to the soil most suitable, it may be mentioned that the Peach requires a lighter material than either the Pear or Plum, yet a good sound loam, rather adhesive than light, made up about 2 feet 6 inches in depth, resting upon a good natural drainage if possible, and young trees without the addition of strong manure I have found answer well. The object is to prevent the production of coarse, too luxuriant, or spongy shoots, which the trees are liable to do when young. Neither is it well for the first year to make the border too wide, 4 feet being quite sufficient; rather would I add to the width as the trees require it. Whatever preparation may be made for the roots care should be taken to prevent their getting too deep, not only by the sinking of the soil, but by additions made from time to time as top-dressings. If the borders are cropped it will be necessary to add to the staple of the soil to replace that taken from it by the crops. I think heavy cropping of fruit tree borders a necessary evil, inasmuch as very few gardens are of sufficient scope to dispense with it.

Next to the soil is a suitable aspect and sufficient wall space. With regard to the former, though the south side of a north wall is generally chosen, I have in some gardens both seen Peaches and had them do well on an eastern or western aspect, provided the situation is high, dry, and open, and no light, sun, or air obstructed by other trees. I do not advise Peach trees to be planted alternately with Pears and Plums, as in these cases of mixed planting the Peach trees are the first to succumb. With regard to wall space it is false economy to curtail that too much; if so, the severe pruning necessary to keep the trees within bounds precludes them from ever reaching or growing into a healthy and fruitful state. A fair height to the wall is as much a necessity as the proper distance from tree to tree. Too much cramping either way ends generally in disappointment.

The many examples of skilful outdoor Peach culture to be seen in various gardens give proof, if any were needed, that a judicious system of pruning and training of the shoots is as important to help towards success. Both the Peach and Nectarine bear their fruits upon the young wood of the previous year, and the blossom buds rising close to the eyes of the shoots it becomes evident that the more light, sun, and air they can get the better will the wood be ripened. In that case summer pruning or disbudding at different times, so as to keep the shoots thin and regulated, is more important than winter pruning where the knife has to be used—in fact, the latter implement should be employed very sparingly. Winter pruning, however, is best done when approaching the spring months, when the most severe frosts are past, and before the blossom buds become very prominent. In pruning or disbudding always have an eye to

keeping the body of the tree well supplied with healthy young wood; if not, as the tree extends in size the middle part of it becomes bare of both wood and fruit.—THOS. RECORD.

TREATMENT OF SOILS, MANURES, AND CROPS.

BROCCOLI.

BROCCOLI should not follow any crop of its own family, but, like Cauliflowers and Cabbages, succeed one of the crops previously enumerated. Sow Snow's Winter White or Knight's Protecting Broccoli on a warm border the first week of March. These will come in for cutting in January, February, and March, after the late autumn Cauliflowers. Knight's will often turn in during December, and I have found it very useful. The plot chosen for the seed bed should be good soil, as present manuring is useless, well dug and trodden down firm, and all will be well if protected from the ravages of the birds.

In the early part of May plant out a plot 2 feet asunder on a well trenched and manured open portion of the garden. It is necessary that the ground be hoed deeply often during the summer, so as to admit the air freely to the soil. They can receive a good watering with liquid manure at any time when the soil is dry. It is necessary to lift them at the end of October with good roots and lay them up to their leaves in a frame, or in some place where they can be protected from the frost with mats, straw, boughs, or canvas. I think Snow's is at present unsurpassed by any other variety, and is especially useful for this crop, as it is hardier than any other I have tried.

In the first week of April sow a little of about three sorts to stand in the ground all the winter. Snow's Winter White will come in for cutting in March and April, also Adam's Early and others, but they are more tender than Snow's. Plant out in June the same as with the previous crop in well prepared ground. The best thing to do with this crop is during October or November to place the spade under and turn them over into a trench previously dug, and the next row into that vacated by the first, raising the soil well up to the leaves. Be sure and not turn them over too early. I once almost lost a fine crop by a fortnight of summer-like weather which nearly killed them all, but if done at the right time they, thus protected, may pass through the winter successfully. At the end of April sow three more sorts, which will come in for cutting during April and May. I like Dilcock's Bride; I have found it decidedly the best, followed by Dalmeny Park and Salter's Imperial. Though old I do not despise them, as they are extra good for this sowing. These are hardy and require no protection.

In the middle of May sow two or three sorts. I have found Cattell's Eclipse come in well. I have had plenty of it to cut, together with Cauliflowers from the autumn sowing. There are of course numerous sorts that will no doubt come in just as well as those mentioned. The district has much to do with them, and also the time of sowing and planting. If a good system is set down by a young beginner, and carried out, he will be able to cut heads all the year round, unless the winter is very severe. The reader need not keep to the sorts named here, but attend to the time of sowing and planting to get them in at a given time. During May sow Purple Sprouting Broccoli. Be sure and have a good supply, as this is certain to withstand the frosts, and come in, perhaps, when many others may be annihilated by hard winters. No special treatment is required, only good open land sheltered from north or east, plenty of manure, and well dug ground.

SAVOYS.

Prepare a good piece of ground on a warm border for the seed bed. It can be set out to look neat, as is usual, in well kept gardens. Sow broadcast and rake the seed in. The ground can be trodden either before or after sowing, but if it is wet this should not be done. The best time to sow is at the end of March or the beginning of April. As the plants become large enough they can be placed out, and treated in all respects like the Cabbages. Some, amongst them myself, are compelled by scarceness of ground to plant them between other crops, but this should be avoided if possible. Plant out some in May, June, and July; the quantity must depend upon the spaces at disposal. It is a mistake to overdo it, as the ground is better if it can have a dressing and digging for the winter.

COLEWORTS.

These are often depended upon for winter use, others grow them for cutting during the later summer and autumn months. I do not put them in the place of better members of the same family, such as Ewing's No. 1, Sugarloaf, and others; those who do can sow seeds in April, May, and June, and treat like

Cabbages, only they require much less space. For procuring plants for winter and spring use sow in July, and plant out the main crop during August. Others can be planted at different times up to November. Coleworts are very hardy, and if the winter is not severe and the spring early they can always be turned in or cleared off, but if it is the reverse they will be found exceptionally useful.

BRUSSELS SPROUTS.

If one variety of the Cabbage family requires better ground than another it is that named above. No labour or manure can be wasted upon it, the length of the stem and the quality of the Sprouts are the first considerations. If ground is plentiful take, say, the Onion bed if not wanted for spring Cabbages, dress well with manure and turn it in, then sow with Vetches or Tares, and during the early spring apply manure, and trench the ground again, using a little lime. This can lie fallow till the planting time. If this is not possible the ground can be well trenched in the autumn, sown with early Peas, such as Sangster's No. 1 or Chelsea Gem in December, and the Brussels Sprouts planted between. The former is much the better, and can be adapted to any of the autumn or winter crops.

Numbers of good Brussels Sprouts are at present in commerce, but there is one in the trial grounds at the Royal Horticultural Society's Garden that I shall try and find space for when it is sent out by Messrs. J. Veitch & Sons. I have noticed it two years, and it far exceeds any other, but it will not want my praise when it receives the Chiswick brand. At present I have found Scrymger's Giant extra good. I should sow in the end of March or the beginning of April, as directed for other crops. Plant out on the ground as soon as the plants are fit. They must not be neglected either in the seed bed or after, but must receive every attention as to watering, hoeing, &c. Some top them after they have done growing, but this I do not advocate, and think it tends to do them more harm than good. Other plantings can be made from the same bed, or from other sowings. One good crop is all I try to obtain.

OTHER WINTER GREENS.

These are all very useful, but are too numerous to classify and are also too often a repetition of the same. Whether they are the Dwarfed Curled or the Tall Curled Greens they can be relied upon for a certainty. The Tall is very hardy, standing severe frost, and are also delicious in frosty weather. The Variegated is useful for garnishing. The Cottagers' Kale is serviceable. In my opinion mistakes are often made, of which I myself am guilty—namely, in sowing and planting too late. Sow the seed in March and April, and plant as directed for other members of this family. They do not exhaust the ground nearly so much as Cabbages.—G. A. BISHOP.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE General Committee of the above Society met at Anderton's Hotel, Fleet Street, on Monday, December 2nd, at 7 P.M., the principal business being to fix the date of the Centenary celebration for 1890, and to appoint Judges. R. Ballantine, Esq., took the chair, and there was a large attendance of members, including the representatives of affiliated Societies. The Hon. Sec., Mr. W. Holmes, reported on various matters in connection with the November Show at Westminster, and announced that the annual dinner will be held at Anderton's Hotel on Thursday, December 19th, at 6 P.M. sharp, when Lord Brooke has promised to preside, and will be supported by Sir Edwin Saunders, Sir Lewis Pelly, and others. Arrangements have been made for a good programme of music, and it is expected that the gathering will be highly satisfactory. It was also reported with regard to the provincial Show at Hull that an excellent Exhibition was secured, comprising over 500 more cut blooms than were secured at the same Show last year, and the receipts were also largely in excess. Some members of the National Society visited York by invitation, and were well received. A vote of thanks was accorded to the officials of the York Society for their courtesy to the deputation, and a similar acknowledgment was, on the motion of the Chairman, directed to be sent to the Ghent Society for the gold medal presented to the National Society at the recent Centenary Exhibition. The silver medal, recommended by the Floral Committee for Mr. R. Owen's collection of cut blooms at the recent Westminster Show, was unanimously granted. Several Societies were affiliated, including one at Launceston, Tasmania, and forty-one members and Fellows were elected, bringing up the total to 673.

The recommendation of the Centenary Sub-Committee (previously

held under the presidency of Mr. E. C. Jukes) with regard to the date of the celebration next year was then carefully discussed. Mr. Jukes reported that it had been resolved to suggest November 11th, 12th, 13th, and 14th as the most suitable dates after a careful consideration of all matters, as it was desired to render the Show as thoroughly representative as possible, and it was feared that it would be difficult to secure specimen plants in the preceding week. An amendment was, however, moved and seconded to the effect that that the 4th, 5th, 6th, and 7th would be the best dates. A number of plant exhibitors thereupon expressed themselves decidedly against the earlier dates, and the amendment was withdrawn, the original motion being carried unanimously. It was explained that it is only intended to make the first two days a competitive display as usual, the remaining two-days Exhibition to be provided by special arrangement with exhibitors.

The next matter was the appointment of Judges, the following being recommended and unanimously elected:—For cut blooms, Messrs. George Gordon, Lewis Castle, J. Douglas, R. Dean, J. Kendall, and W. G. Head; for specimen plants, Messrs. Donald and Prickett; for fruit and vegetables, Messrs. A. F. Barron and J. Roberts. Six reserve Judges were also selected, and this concluded the business of the meeting.

CHRYSANTHEMUM LUNE FLEURI.

COMPARATIVELY few additions to the Pompons are now obtained, and this renders any novelty of merit all the more welcome. Mr. R. Owen of Maidenhead exhibited a large collection of new Chrys-



FIG. 60.—CHRYSANTHEMUM LUNE FLEURI,

anthemums at the meeting of the National Chrysanthemum Society's Floral Committee on November 12th last, amongst them being several that were found worthy of certificates, a silver medal being awarded for the whole exhibit. The Pompon Lune Fleuri (fig. 60) was included with the certificated varieties, and, though, perhaps too small to satisfy the taste of some exhibitors, it is just the style that we ought to look for in this type of Chrysanthemum. The blooms are globular, very even, somewhat in the way of Model of Perfection, but of a rich deep golden colour, very distinct, and it is likely to be useful both for general cutting purposes and for exhibition.

CHRYSANTHEMUM GROUPS.

SOME remarks respecting groups of Chrysanthemums are given on page 480, and the admirable character of those shown in competition at the recent Hull exhibition is there noted. The illustration (fig. 62, page 489) has been prepared from a photograph of the best of them—namely, that which gained the premier honours—a silver cup—for Mr. J. P. Leadbetter, gardener to Arthur Wilson, Esq., Tranby Croft, Hull. As we noted last week, the winning group was distinguished by the high quality of the bloom, the free effective style of arrangement, and the neat margin of foliage plants. The latter were of moderate size, clean healthy specimens, not so large as to crowd the Chrysanthemums or detract from their beauty in any respect. Perhaps it could have been improved if the plants had been a little less rigidly staked, but altogether there were fewer defects than such groups usually possess.

CHRYSANTHEMUMS AT CHARLTON.

HAVING paid half an hour's visit to the gardens of the Charlton Brewery at Shepton Mallet, I was greatly struck by the good Chrysanthemums to be seen there, which would have done justice to the exhibition board, but unfortunately Mr. Curry could not get permission to exhibit. Though not large in number, the blooms of the following varieties were very fine:—Lord Alcester, this has been good in this neighbourhood generally; Boule d'Or, Val d'Andorre, Fair Maid of

Guernsey, Hero of Stoke Newington, Mrs. G. Randle, Hiver Fleuri, Queen of England, M. C. Audigui, Golden Dragon, Cherub, &c.

The stove, which is small, contains some healthy plants, comprising *Dracena terminalis*, a good pot of *Microlepis hirta cristata*, *Pandanus Veitchi*, &c. In the other houses may be seen excellent *Freessias*, strong growths, promising well; *Primulas*, *Lachenalias*, and *Zonal Pelargoniums*. A few *Orchids*, including *Dendrobiums*, *Celogynes*, and *Oncidiums*, are now in flower. *Cinerarias* are promising well, and everything is creditable to Mrs. Berryman's gardener, Mr. Curry.—A. G. FRAMPTON.

A DAMP INDICATOR.

MR. F. W. BECK, a florist at East Grinstead, and Honorary Secretary of the Horticultural Society there, is the inventor of the small instrument represented in fig. 61 for registering the amount of moisture in the atmosphere of plant houses, dwellings, machine rooms, and other places where injury is done by an excess of damp when the excess is not suspected. We have been informed that a damp bed suggested the production of something that would indicate whether a "strange bed" was damp or not. The instrument has been found useful in that and many other respects, and is largely sold in this country and America. It is so sensitive that when the case is opened the indicator moves by the action of the breath, just as the mercury in a thermometer rises under the influence of heat applied in the same manner, the extent of damp being determined by the figures to which the small thread-like detector points. Particulars accompany each instrument, which is about twice the size of the illustration, and generally resembles a small aneroid barometer.

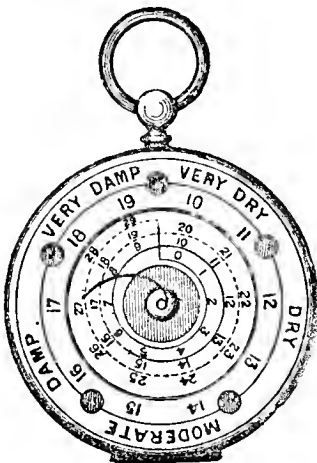


FIG. 61.—DAMP INDICATOR.

PLANTING FRUIT TREES.

APART from the question of manurial matters, and, as a preliminary step to the consideration of making plantations of fruit trees, we may offer a few remarks on the texture of soils. Drainage, it is well known, exercises the most powerful influence on the texture of water-logged soils. By removing superfluous moisture a free admission is afforded to the ameliorating effects of the atmospheric action; but even the most thorough drainage will not suffice on many soils as to fruit culture. The oozy and elastic bog wants consolidation, combined with a mechanical separation of its particles; the clay requires a gritty or sandy medium in order to permit the rains to percolate or slowly pass through it, and in consequence the air to enter freely; whilst the loose sandy soil requires some body to give adhesion to its parts, and, indeed, as the opposite of the clayey soil, to prevent the rain from passing through too rapidly, and carrying away manurial matters in its course.

Those, therefore, who are about planting a whole garden, or section of one, at once, should thoroughly consider this question, and, after examining well the soil and subsoil, endeavour to procure eligible materials for correcting faults in the staple. Where surface soils are naturally inclined to sand either marl or clay will prove suitable to mix with them; or, what is better by far than either, the furrowings from old pasture lands of a strong or stiff loamy character. The latter, however, is only within reach of a few, and marl is the next best thing, but this also is not found everywhere. Where clay is very stubborn we think that a burning process might be applied profitably. In addition to these materials any old vegetable matter, whether it be decayed weeds, leaves, old tan, or, indeed, anything that carries the appearance of humus, may be blended with advantage. If, on the contrary, the surface soil is very adhesive, pure sand, sandy soil of a loose character, and even coal ashes, may be incorporated with the volume of soil, and, indeed, a proportion of the decomposed vegetable matters suggested for the sandy soil. On such heavy soils we would, by all means, recommend spring planting; and, in that event, the holes should be excavated immediately in order to undergo a long winter's action for the sake of breaking down the adhesive material. If the whole plot is to be improved trenching and ridging should be resorted to; here, again, the winter's frost will amply compensate for the difference of a few months and save labour.

In rendering boggy soils suitable for fruit-tree culture a somewhat different course must be pursued. Here, however, it is necessary to distinguish clearly the character of the dark material. Some boggy soils are of an elastic character—that is to say, they will rebound on a stamp of the foot; this merely shows that much organised matter exists in the main composed of bygone generations of sphagnum mosses, together with weeds and grasses, in a

state of decomposition. This is above all, perhaps, the most inelible character of any for fruit-tree culture; nevertheless, it is not a hopeless case; albeit, much culture is requisite. Where a considerable depth of such material exists burning may be had recourse to. This will correct the acidity and produce ashes, which will be of much utility in opening the texture of the soil. However, before other operations take place, the most complete drainage must be had recourse to. Without this all other operating will be totally inefficient. Such soils require both sand and clay, or marl, after being rendered tolerably dry. These materials, well incorporated with the native soil, will, with culture, remove the spongy character of the mass and produce a degree of solidification which will give a permanency and stability to the crops.

We have been making these remarks with a view to assist those who are about reclaiming ungenial plots of land; for, in going through the country, how many such enclosures we see, some taken from the sides of commons, others from the roadsides, left uncultivated in days when land was of less value and when the population question did not press so heavily. Moreover, hundreds of little nooks have been split from out-of-the-way corners of farms, and not unfrequently composed of a soil of somewhat sterile character. Most of such little enclosures, as we have seen them, are placed under culture without due preparation; too little attention is paid to the amelioration of the staple, and, as a necessary consequence, fruit trees in a number of cases do not succeed and prove as remunerative as they ought, for we would not only have the cottager to secure his own dumpling Apples, but to pay a portion of his rental annually by the sale of Apples, Pears, Black Currants, &c., as the case may be.

Our hints here, then, will, we trust put people on the alert to obtain forthwith some material to improve the texture of their soils according to the principles here explained. One thing we had almost forgotten: those who are improving stubborn plots in the vicinity of towns should always keep a look out for the old mortar or plaster from the pulling down of old buildings. This is a capital ameliorator.—E.

THE WINTER MOTH.

FROM almost every part of England, and many places in Scotland, reports reached me of the serious damage done to fruit trees during last April and May by the caterpillars of the winter moth, *Cheimatobia brumata*. It is by no means particular as to its diet, and the list of trees and shrubs upon which the insect feeds is a long one, but I think it is specially partial to the Apple, Plum, and Filbert. The revolutions or changes in insect life which cause a special abundance of a species during one season may often result, as we know, in a scarcity of it during the next; still, there being a possibility that after a profusion one year the following season may show even larger numbers, there is good reason for doing what we can now to protect ourselves from serious losses through these caterpillars in the season of 1890. At this moment we are in what has been called the winter campaign, and have good opportunities of destroying the parent moths, or preventing the deposition of their eggs, also of removing eggs which have been insidiously laid.

That able entomologist Newman has justly said that this winter campaign is of the greatest importance, and accomplishes more than all the methods for killing the caterpillars or the pupæ. Indifferent to cold seemingly, the moths emerge from the pupal condition some time between the beginning of November and the end of the year. I have most frequently seen them in December, but evidently there is a succession of them, and they do not appear all at once, but gradually. The particular date [depends, no doubt, partly upon the weather in early winter; partly also I think upon the date when the caterpillars were full grown. In colouring the male moths are greyish brown, not very noticeable when sitting on fences or trunks of trees; the females are stout, also brown, but have only rudimentary wings, so they cannot fly, and creep about in spiderlike fashion. Having emerged, it is then their object to place their eggs, which number nearly 200, in little masses upon stems or branches, upon leaf or flower buds, and sometimes they attach them to the dried leaves which may chance to remain on the trees. It is easy to detect these by daylight, and remove them with the aid of a lantern. They may be sought after dark, as they appear frequently to keep near the earth till dusk, when they begin their pilgrimage to the trees. I cannot but think that some of them at least must fall victims to insect-loving birds, though I have not seen them seeking these moths. Digging over soil in which the pupæ may lie is advantageous if done in good time; it exposes them to various enemies, and to the influence of autumn rains or early frosts.

But one of the best methods going is the surrounding the stems

of trees with a sticky or clogging substance of some kind, over which the moths are unable to crawl. This has been long practised in Germany, though I will not say we borrowed the idea from that country. There the gardeners have been in the habit of putting round choice trees a sort of frame, having a projecting coping, upon which tar is daubed, and renewed as may be necessary. An objection to this is that it is rather expensive, therefore not applicable to orchards, and hence has arisen the practice of smearing the tree itself to prevent the moths ascending. Several compounds have been tried. The most suitable of these is a combination of equal parts of cart grease and Stockholm tar. Newman observes that it tightens the bark somewhat, so that this should be slit subsequently. The complaint has been made, however, that a sunshiny day, even in winter, will make the tar soak in, which produces an injurious effect, and Newman suggests a preparatory coating of whitewash, made of whitening and glue size, upon which the sticky composition is then laid. Others have tried placing in the earth round, but not touching, the trees ropes or hybands wetted with a mixture of tar and oil. Miss Ormerod speaks in favour of throwing about the stems gas lime which has been exposed for awhile to the air, and this remedy is of utility for espaliers or walls; but as yet it has not been sufficiently tried by gardeners and growers of fruit. It is one argument for postponing the operation of pruning till after Christmas, that by this means boughs and twigs which may contain eggs of this or of other species of insects are removed, and should be speedily burnt.

A very important question has arisen with reference to these precautionary measures—namely, what is the cause of their possible failure, as in several reports concerning the winter moth sent from various districts gardeners stated that the trees had been carefully coated, but nevertheless the caterpillars appeared in swarms during the spring. It is desirable to ascertain what is the explanation of this, or at least what is the likeliest of any that may suggest themselves. As I have stated, it is the habit of the caterpillars when full grown to descend to the ground, in which they bury themselves for the approaching transformation. I have never noticed an exception to this, nor have my entomological friends; but supposing it to be the fact that the caterpillars sometimes remained in their webs to become pupæ, the moths would be quite secure from entanglement or stoppage upon the stems. It is barely possible that when feeding on lofty trees they might not all descend, but I do not think this gives the clue. Still, next season it will be desirable to examine carefully into this point, as we do often meet with singular aberrations of habit. Certainly all webs seen upon trees, whether at the time they are feeding or later, should be carefully removed. Something depends upon the date when the composition was laid on the trees. Supposing the moths had emerged earlier than usual, evidently it would be of no good taking this step in December when the eggs must have been deposited. Yet the weather last autumn was not such as to hasten their appearance, and it might be just the opposite error, the composition being used too soon, perhaps some weeks before the insects emerged; if so, it would become partially dried, and they would be able to cross. This might be accomplished also by young caterpillars, for it must be remembered that though some moths get into the tarry substance and perish, others remain beneath it unhurt, and probably lay their patches of eggs. In the spring the caterpillars emerging from these may travel up the trees. The conclusion of the matter is that whatever is placed round the trees should be examined daily for results, and any patches of eggs that may be detected should be crushed.—ENTOMOLOGIST.

JUDGING from the letter of Miss Ormerod's in this Journal (p. 459) that no practical remedy has yet been discovered for the caterpillar pest on fruit trees after they once get possession, I hope you will pardon me for saying how I cured an Apple tree last year when a crop of fruit appeared hopeless. I simply made a fire under the tree with a lot of rubbish, making a dense smoke, and kept it going for a few days with any weeds that came to hand. The result was that I had a capital crop of very fine fruits, the best the tree had ever borne. Usually the fruit was much speckled right to the core, but last year I did not see any. If you think this will be of any service to your readers make what use you like of it.—C. G.

PLANTING YOUNG VINES.

IF I recommend one system of planting young Vines more than another it is planting them in a growing condition with their roots intact. I disapprove of the principle of washing the roots of young Vines previous to planting. I think I also said that for years I had failed to see the wisdom of following the orthodox principle of shaking away all the soil in order to spread out the roots. It is to my mind a barbarous system of root-pruning, and I fail to see how

Vines can be expected to make such luxuriant growth the season following as they would if planted without being disturbed at their roots to such a serious extent. I am aware that Vines with careful treatment will do well even on this principle, as well as many others, and I tried to show on page 230 of this Journal for March 21st that good Vines could be established by a variety of systems.

The size of the canes given by your correspondent, "J. L. H.," is not extraordinary. I have seen Vines grown in one season exceed 2 inches in circumference. I have some Vines considerably stronger, two years old, planted last autumn while the foliage was fresh, that have carried a crop of Grapes. It is very difficult to draw comparisons, and the only means of doing so, and arriving at the system most preferred, is to plant on the two systems, side by side, and note the results. I am acquainted with a grower of Grapes for the market who planted his first house according to the established principles and by the advice of one skilled in the culture of Grapes, but when planting his next house he departed from orthodox views, because the preparation of the border was too costly an operation, and followed a common-sense view that did not entail half the labour or expense, and the results have been the more satisfactory of the two. What is needed in the establishment of Vines is sound judgment, guided by the circumstances of each case, which, I am convinced, will often lead to better results than strictly following some rule of thumb.

I am no advocate for that extra luxuriant growth that is often seen in young Vines. It is full of pith frequently, and cannot be thoroughly matured. I prefer to this forced growth, that must tell against the constitution of the Vine in after years, firm wood of moderate strength that can be thoroughly matured. Vines of this nature build up from the first good constitutions and are capable of bearing fruit and improving in strength and vigour, while overgrown ones often fail, or partially, when they have to undergo the strain of fruit bearing.

I am glad your correspondent has built up his Vines on sound principles, preferring firm sturdy growth to mere size, which is very frequently deceptive.—W. B.

CANTERBURY BELLS.

THIS is one of the most useful hardy biennials we have either for conservatory or church decoration. It is easily cultivated in pots, and when in bloom is highly effective. The plants naturally assume a pyramidal form, and grow to the height of from 2 to 3 feet, and they flower freely from top to bottom. The colours of the flowers consist principally of shades of blue and pure white. To grow it well the seed may be sown on a sheltered border some time in May, and the plants, when sufficiently large, lifted and placed into 60-sized pots, in a compost of loam, leaf mould, and sand, transferred to a cold frame and shaded for a few days until the roots have taken hold of the soil. The shading must then be removed and air admitted freely on all favourable occasions. When the plants have filled the pots with roots shift them into their largest pots; we find 6 and 7 inch the most useful for all purposes. The soil used consists of more loam and less sand and leaf mould than was used at the first potting, and the compost is not enriched with manure of any kind. The plants may now be placed in the open on the side of a gravel walk, or on ashes in the frame ground, where they can be properly attended to and regularly supplied with water, as no plant suffers sooner from neglect than this.

About the end of September or the beginning of October the plants are thoroughly cleared of all dead and decayed leaves, and placed in a cold frame for the winter. Although the Canterbury Bell is perfectly hardy and will stand a considerable amount of frost with impunity, it will not endure damp and rain when grown in pots. The plants must have plenty of air during winter, and in good weather we remove the lights to dry the foliage and prevent it damping.

In the month of April the plants are taken out of the frame to make room for bedding plants, and plunged in any convenient piece of ground until they come into flower, when they may be removed to the conservatory as required. As soon as they show their flowering spike they are staked (one stake in the centre of the pot is sufficient), tied, and watered after this with weak liquid manure two or three times a week. If the plants are properly attended to, and all blooms picked off as soon as they begin to decay, they will last a long time in flower, and give general satisfaction. They cost little in growing, and answer the purpose of decorating church or mansion as well as the most expensive. In my opinion the Canterbury Bell deserves to be more extensively cultivated in pots for decorative purposes that it is at present, and

I have no doubt when its good qualities are better known it will become a general favourite.—HUGH PETTIGREW, *Cardiff*.



EVENTS OF THE WEEK.—The Royal Horticultural Society's Fruit and Floral Committees will meet at 11 A.M. on Tuesday next, December 10th, at the Drill Hall, James Street, Westminster. The Orchid Nomenclature Committee will also meet at 11.30 A.M. in the Lindley Library at the offices, 111, Victoria Street, on the same day. The National Chrysanthemum Society's Floral Committee will meet at the Royal Aquarium, Westminster, at 2 P.M. on Wednesday, December 11th, the usual business to be followed by a complimentary dinner as terminating the year's work.

— **ROYAL HORTICULTURAL SOCIETY.**—At the last meeting of the Council of the Society Mr. A. H. Kent, A.L.S., of the Royal Exotic Nursery, Chelsea, was unanimously elected an honorary Fellow under byelaw 15.

— **THE WEATHER IN THE SOUTH** has become very winterly, sharp frosts prevailing, and exceptionally low temperatures have been registered in some districts. On several mornings the thermometer has stood at 18° Fahrenheit. A little snow has fallen, but the weather generally has been dry and clear.

— **THE WEATHER IN THE NORTH.**—Last week winter seemed upon us with a bound. On the night of the 25th ult. frost set in, with snow in many parts of the country. In South Perthshire but little snow fell; 5°, 9°, 7° of frost were registered on successive nights. Thaw began on the evening of the 28th, and since then we have a return of dull, drizzly weather. Many varieties of flowers can still be had, and a Rose bud worth gathering peeps out here and there.—B. D.

— **DULWICH PARK.**—We understand the tender of Messrs. Cutbush for planting Dulwich Park, an area of seventy acres, at the cost of £1014, was accepted as urgent in order that the trees might be planted before Christmas.

— **SHOWS FOR 1890.**—We are informed that the Portsmouth Chrysanthemum Society will hold their Show next year on November 5th, 6th, and 7th. The Kingston-on-Thames Society's Show is fixed for November 11th and 12th. Mr. J. Wright is engaged for both those shows. The National Society's Centenary Celebration will take place on November 11th, 12th, 13th, and 14th, the two first days only being for a competitive display as usual.

— **MESSRS. J. CARTER & Co.,** High Holborn, send us a sample bulb and illustration of *NARCISSUS TAZETTA* GRAND EMPEROR, named "The Good Luck Lily," "Chinese Sacred Lilies," "Joss Flowers," and "Water Fairy Flowers." It appears to be a strong-growing and very free-flowering variety of the *Polyanthus Narcissus* group, and it is shown in the illustration growing in a bowl of water. The importation is said to be "direct from the mountainous districts of northern China."

— **IN** the conservatory at Firbeck Hall, Rotherham, there is a fine plant of *LUCULIA GRATISSIMA* in flower, just now forming a screen 15 feet wide by 8 feet deep. It has about 500 blooms on it, of such a size as are seldom seen, and of a pleasing pink colour at this dull season. The conservatory is large, but the whole house is filled with the delightful fragrance. Mr. Egglestone, the gardener, planted it out in the bed of the conservatory a few years ago, and he may well be proud of such a grand result.—VISITOR.

— **IN** our issue of November 23th, the report of the EDINBURGH SHOW (the cup class) the third prize winner reads—G. Cockburn, gardener to G. Burden, Esq., Lingdale Lodge, Birkenhead. It should be G. Burden, gardener to G. Cockburn, Esq., Lingdale Lodge, Birkenhead. At the Show in question it is said the names of all the winners were not attached to the stands, and as they had to be searched for in a catalogue, it would not be surprising if several errors occurred.

— **THROUGHOUT** Scotland, as well as in the south, **TUBEROUS BEGONIAS** are now favourite flower-garden plants. They bear much wind and wet without injury, and the flowers are attractive in form and colours. Two or three years ago they could not be bought under 6s. a dozen, now I have plenty of the same kind offered at 20s. a hundred, and this will tend to make them more popular. As grown in pots those under the care of Mr. David Thomson, Drumlanrig, surpass any I have seen. Many of them are bushes about a yard through, and the blooms were 8 inches in diameter.—M.

— **GARDENERS' ORPHAN FUND.**—At Worksop, Notts, on November 20th, a grand and highly successful concert in aid of the above was held under distinguished patronage, promoted by the gardeners of the district—viz., Messrs. Egglestone (Firbeck), Horton (Welbeck), Jefferson (Carlton House), Mallender (Hodsock Priory), Sutton (The Manor), Woods (Osberton), Henderson (Thoresby), Treasurer, with Mr. Gleeson (Clumber), Hon. Sec. F. J. S. Foljambe, Esq., made a short speech to open the concert, setting forth the claims of the Society on the public at large. After the first part of the programme had been gone through, Mr. Mallender, on behalf of the Committee, thanked the performers for their services, and the audience for coming in such numbers. The total receipts were £80 5s., leaving the handsome sum of £57 10s. to go to the general fund. Altogether the concert was a wonderful success, and reflected most creditably upon the energy and tact which was displayed by the Committee, and most especially the courteous Hon. Sec., Mr. Gleeson. At a meeting of the Executive Committee of the Fund, held on Friday last, among other contributions announced was a sum of £12, the result of a concert at Chiswick, and as Mr. J. Barry had obtained upwards of £5 of that sum by the sale of tickets, he was placed on the list of life voters in accordance with the rules.

— **WE** regret to announce the death of **MR. GEORGE MARR**, head gardener to H. Silvertop, Esq., Ministracres Hall, which took place on December 1st. Mr. Marr was forty-five years in the above family, and for the last thirty-five resided at Ministracres. He was in his seventy-eighth year, and was one of the oldest and most respected gardeners on Tyneside. He was well known at all the local shows, both as an exhibitor and judge, and one of the old school of gardeners, fast dying out. He was born in Fifeshire, served his time in the Earl of Minto's gardens at Balcarres, and went from there to the Botanic Gardens, Edinburgh, to study botany under the late Mr. McNab. Thence he removed to the service of the family with whom he died. To his last he could tell the name of every wild flower that was brought to him.

— **DEATH OF MR. HENRY CURTIS.**—Mr. Henry Curtis, head of the firm of Curtis, Sanford & Company, Devon Rosery, Torquay, died rather suddenly at an early hour on the morning of November 26th from heart disease, at his residence at St. Helier's, Torre Hill. The deceased gentleman was in his seventieth year. He came of a family of botanists, being the grandson of William Curtis, author and originator of the "Botanical Magazine" and "Flora Londinensis." The late Mr. Curtis was himself author of "Beauties of the Rose," and was a very enthusiastic and successful Rose grower. He was also a medical electrician of much skill. Kindly and gentle, Mr. Curtis was held in the highest esteem. He will be much missed in Torquay and the neighbourhood.

— **TOMATO CULTURE IN THE OPEN AIR.**—In Colonel Turberville's garden at Ewenny Priory Mr. George Hawkins grows Tomatoes in the open air with noteworthy success. They are planted at the bottom of a low brick wall under a span-roofed glass house, and trained up about 3 feet. They are mainly confined to single stems, kept very free of foliage. Some of the fruits had formed so near the ground as to touch it. They were a crowd of clusters on every part. Individually many of them would weigh 8 ozs. They were ripening fast early last September. The crop was a picture, and I regarded it as the best in the open air I had ever seen.—J. M.

— **EAST ANGLIAN HORTICULTURAL CLUB.**—A meeting having for its object the formation of a Horticultural Club for East Anglia was held at the City Arms, Norwich, on Thursday, the 21st ult. Taking advantage of the occasion of the Norwich Chrysanthemum Show, which was held the same day, when a large number of gardeners annually visit the city, a circular was issued convening the meeting on that date. A large and influential gathering was the result, many of the best-known gardeners in the county being present. Mr. G. Daniels, Norwich, presided, and among others present were Messrs. Allan, Gunton Park; Baker, Marlingford Hall; Bartlett, Earlham Hall; Bole, Somerleyton Hall; Gilbert, Sennowe Hall; MacMillan, Oakley Park; Cork, Norwich; Morris, Milton House; Woodhouse, The Plantation, &c., &c.

After a friendly discussion it was unanimously agreed that a Club having for its aim the advancement of the science of horticulture in the eastern counties be formed, and with that view a Committee was elected to organise future procedure, Mr. Morris of Witton being appointed President for the ensuing year. Members were enrolled freely, great hopes being expressed of the outcome of the meeting.

— FROM Ashton Court Gardens we have received some of the earliest and best forced LILIES OF THE VALLEY we have ever seen. They are from home-grown crowns, and we hope shortly to give some notes on their culture.

— ONION, BLACK DOUGLAS.—I should like to know the parentage of this new Onion. As grown and shown by Mr. Murray it appears only as a magnified form of the old Blood Red, and until I know better I shall regard it as such.—K. G.

— CARNATION W. M. WELSH.—This is a recently introduced border Carnation of more than ordinary merit. It is a robust grower, most profuse in flowering, and as a late variety in the open air it attracted my attention above all. The flowers are of average size, the colour a clear crimson scarlet, and its general good character, including its extra late habit, will recommend it to many.

— CELOSIAS are not grown so much as they ought to be for the embellishment of the conservatory and greenhouse in summer and autumn. I have this season seen them arranged with telling effect in groups of plants at shows, and their graceful heads adapt them admirably for this use. But the half Coekscomb half Celosia-like heads obtained from many packets of seed are not encouraging, and if anyone would introduce and perpetuate a strain with perfect feathery plumes they would benefit themselves and growers generally.

— POTATO VICTORIOUS.—I am glad this new Potato gained a certificate of merit at the recent Vegetable Conference. Half a dozen years ago ten new seedling Potatoes were sent to me for trial. None was specially recommended, all were to go on their own merits. Being partial to a good mealy tuber, I began weeding out from my first crop. Until this year the variety which has since taken the name of Victorious was my only selection from the original ten, and I take as no small compliment to myself that I managed to hit on the right sort as well as Mr. Laxton. I had no communication with him on the subject all through, but the results were parallel.

— AMERICAN BLACKBERRIES have never won my approval. I have been unable to grow or find any of them to merit ordinary praise. I have this year travelled almost from Land's End to John o' Groat's, and have not once met with a good crop. I have inquired in likely quarters, but with no result. How is it? Are they not grown; or have they failed? Wild Blackberries have been unusually plentiful this year. A good season for them should also be good for the Americans, and yet I have been unable to find them. I feel sure if our natives had received the same culture as has been given to some of those in question they would have produced astonishing crops, and I am inclined to advise those who have no wild Blackberries growing in their neighbourhood, but who like the fruit, to try a few scores of plants from a friend's hedgerow.—SOUTH WALES.

— ARTOCARPUS CANNONI.—Specimens of this really handsome ornamental stove shrub are now in full beauty of foliage at the Birmingham Botanical Gardens, and it is a lovely plant for decorative work. It was received from Mr. William Bull under the name of Ficus Cannoni. The plant is thus described in Nicholson's "Dictionary of Gardening":—"Leaves alternate, petiolate; petiole and midrib bright red; upper surface glossy, of a rich full bronzy crimson hue, beautifully tinted with purple; under surface bright vinous red. The leaves vary much in form; some are simple and cordate at the base, with the apex irregularly lobate; some have the apex regularly three lobed, with short entire lobes; others, again, are deeply three lobed, being divided nearly to the base, the segments, of which the centre one is the largest, being slightly sinuate lobed. This is a most distinct and handsome ornamental-leaved plant." Mr. Latham finds the plant of easy cultivation, moisture and warmth being two essential points, and a soil of fibrous loam and peat and good drainage.

— Mr. J. MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR NOVEMBER:—Mean temperature of month, 43.2°. Maximum on the 7th, 63.0°. Minimum on the 28th, 28.1°. Maximum in the sun on the 7th, 106.0°. Minimum on the grass on the 27th, 20.0°. Mean tempera-

ture of the air at 9 A.M., 42.8°. Mean temperature of soil 1 foot deep, 44.8°. Number of nights below 32°, in shade seven, on grass twelve. Total duration of sunshine, forty-four hours, or 17 per cent. of possible duration. We had thirteen sunless days. Total rainfall, 0.42. Rain fell on thirteen days. Wind, average velocity, 8.0 miles per hour; velocity exceeded 400 miles on two days, and fell short of 100 miles on eight days. Approximate averages for November:—Mean temperature, 41.7°; rainfall, 2.04 inches; sunshine, fifty-one hours. Remarks:—A mild, calm, and very dry month; rainfall less than half that recorded in November in any of the previous fourteen years.

— ROYAL METEOROLOGICAL SOCIETY.—The first meeting of this Society for the present session was held recently at the Institution of Civil Engineers, Dr. W. Marcet, F.R.S., President, in the chair. Nine new Fellows were elected. The following papers were read:—(1.) "Second Report of the Thunderstorm Committee." This is a discussion by Mr. Marriott on the distribution of days of thunderstorms over England and Wales during the seventeen years, 1871-1887. Notices of sheet lightning are included in the term, "thunderstorms." The years of greatest frequency were 1880, 1882, 1884, and 1872, and the years of least frequency 1887, 1874, 1879, and 1871. Years of greater or less frequency alternate regularly throughout nearly the whole of the period. The average yearly number of thunderstorms is about thirty-nine. The districts with the greatest yearly frequency are the south of England and extreme northern counties, and those with the least yearly frequency are Cheshire, Lancashire, and Yorkshire. The greatest number of thunderstorms occur in July, and the least in February and December. (2.) "On the Change of Temperature which accompanies Thunderstorms in Southern England," by Mr. G. M. Whipple, B.Sc., F.R.Met.Soc. (3.) "Note on the Appearance of St. Elmo's Fire at Walton-on-the-Naze, September 3rd, 1889," by Mr. W. H. Dines, B.A., F.R.Met.Soc. (4.) "Notes on Cirrus Formation," by Mr. H. Helm Clayton. The author, who has made a special study of cloud forms and their changes, gives a number of notes and drawings on the formation of cirrus under various conditions—*e.g.*, in a previously cloudless sky, cirrus bands with cross fibres, cirrus from cirro-cumulus clouds, cirrus drawn out from cumulus clouds, "mares-tail" cirrus, &c. Curved cirrus clouds, when accompanied by decreasing barometric pressure, frequently indicate that a storm of increasing energy is approaching. (5.) "A Comparison between the Jordan and the Campbell-Stokes Sunshine Recorder," by Mr. F. C. Bayard, F.R.Met.Soc. As a result of a year's comparison between these two instruments, the author found that the Jordan Photographic Recorder registered nearly 30 per cent. more sunshine than the Campbell burning recorder. (6.) "Sunshine," by Mr. A. B. MacDowall. This is a discussion of the hours of sunshine recorded at the stations of the Royal Meteorological Society. (7.) "On Climatological Observations at Ballyboley, Co. Antrim," by Prof. S. A. Hill, B.Sc., F.R.Met.Soc. This is the result of observations made during the five years 1884-1888.

THE GOLD MEDAL FRUIT ESSAY.

THIS essay is now published. It consists of 120 pages, clearly printed on good paper, and contains thirty-eight illustrations. Nothing is said here relative to the merits of the work: criticism can be more appropriately left to others. We simply print the introduction and concluding paragraph. For price, see advertisement.

"At no former period was such a widespread desire manifested as exists now for improving the condition of the industrial population, and for developing the resources of the soil in the production of an adequate supply of home-grown fruit. The necessity for the accomplishment of these objects is apparent, for on the one hand we have men in abundance who, with the aid of sound guidance, could engage usefully in the work, and on the other the extraordinary fact of not cities and towns only, but even country villages, with fruit-growing land all around them, largely supplied with Apples grown on the western shores of the Atlantic. It is true we have orchards, but of what kind? In the majority of instances they are composed of trees planted generations, not to say centuries, ago, which can only bear fruit so small, juiceless, and uninviting that consumers naturally purchase the larger and better-looking imported samples, which are so plentiful and so moderate in price. If home cultivators have not had a larger share of profit in producing the fruit supply in the markets, where rests the fault? A number of answers in the form of allegations are ready to hand, and have been so often repeated as to have become common property. Here they are:—Obstructive land laws, ecclesiastical charges, oppressive railway rates, high market tolls, salesmen's exactions, shop-keepers' extortions, free trade, and bad climate. Repeatedly have these reasons been given in all sincerity as the causes of the great importations of hardy fruit. We can admit the full force of all these impediments, but it will not be difficult to show that something remains more accountable

than them all for the above-mentioned anomaly. What is the great omission? Mark well the answer. There is not one obstacle but three—namely, a lack of knowledge on the subject of fruit, of enterprise in producing it in its best form, and of art in placing it before the public in the most attractive manner for arresting attention and commanding purchasers. Granting to Transatlantic cultivators all their natural advantages, which are possibly over-estimated, still let us not forget our own apathy, our loose methods, and our unsystematic, unbusinesslike procedure—not forget but abandon them. Proceed on sounder principles and more intelligent lines, and the time will come when we shall, to a far greater extent than now, and far more creditably, share in providing our population with the most wholesome of food, which will be increasingly required—fruit—the outcome of home effort and well-applied labour in British gardens and orchards. Let trees and bushes be planted of varieties of proved merit in soils and situations in which they will thrive, and they will be growing into fruitfulness contemporaneously with the removal of legal and commercial impediments. Thus those who take action the soonest will be the first to profit by whatever changes may be made. Even under existing conditions fruit culture, well conducted, has been of real service to many, and while land under ordinary cropping has depreciated in value during late years, that on which young orchards and thrifty trees are established has increased in price. What better testimony can be needed of the improving character of fruit culture? And what more conclusive evidence is required for its extension than the predominance of cankered trees and worn-out orchards nearly all over the country, with fruitless homesteads and treeless gardens on every hand? Let us see what can be done for those who are willing to help themselves in increasing the supply of useful, wholesome, hardy fruit.”

* * * * *

“Endeavour has been made to treat the important subject of this essay as fully as possible within the stipulations—to condense the essentials of fruit culture and fruit management into its pages; to teach soundly, and, above all, plainly, in the hope of teaching usefully those who have or can acquire land for producing fruit for their families, and for the inhabitants of adjacent towns, to the mutual advantage of all. Given knowledge on the subject, and industry, many an example proves, and some have been adduced, that—to quote the words of Alderman Sir James Whitehead, Bart., Lord Mayor of London (1889)—“There is no reason why much land should not be made three times, five times as profitable as it is now by fruit cultivation, and if the work is carried out with energy and zeal it will be of great benefit to the country we love so well.”

THE QUALITIES OF CHRYSANTHEMUMS.

[A paper read by Mr. George Gordon at Hull, Nov. 21st.]

CONTRARY to the expectations of some of my friends, it is not my intention to tax your patience with a long technical description of the properties of the several sections into which the Chrysanthemums have by common consent, been divided. Such description might be instructive, but it would be decidedly wearisome, and probably fail to promote that free discussion so essential to the success of these gatherings. What I purpose doing is to briefly touch upon a few points that appear to be of special importance, and therefore deserving of the careful consideration of those who are anxious to maintain a high standard and develop to the fullest possible extent the educational side of the exhibitions.

In the first place I have to submit that the marvellous increase in the number of Chrysanthemum societies during the past decade has not been an unmixed good. Their multiplication has created a greater degree of interest in the Chrysanthemum, and in providing additional facilities for growers to meet in friendly rivalry the newly established societies have materially assisted in extending the cultivation of the flower; but societies should do something beyond creating interest and increasing the number of growers. They should have for their chief aim improvement in culture. This they should carry out by endeavouring to set before the visitors to their exhibitions specimens of both plants and flowers in the highest possible state of perfection. Taking a broad view of what has been accomplished by societies generally, it must be stated that an immense improvement has been effected of late years. But if we examine the work of individual association we shall find that in many instances they have failed to exercise a really beneficial influence upon Chrysanthemum culture, because of the low standard of quality they have adopted. Were it necessary for the purpose of my argument I could give the names of not a few societies whose exhibitions have undergone but little improvement since their foundation. They may, perhaps, have increased in extent, but have failed to show any signs of improvement in the quality of the productions. But there is no occasion to mention their names, and it is far more agreeable to refer to societies that by setting up a high standard at the first have had an immense influence in diffusing a knowledge of the principles that must be observed by cultivators desirous of obtaining a place in the front rank. Leaving out of consideration the National Chrysanthemum

Society, which at no period in its history has failed to pay due regard to high quality, I will mention two Societies that have specially distinguished themselves in the work of improvement. These shall be the two Kingston Societies, the one on the Thames and the other on the Humber. Many of those present are acquainted with what has been done by the Kingston-on-Thames Society, and a much larger number are familiar with the work that has been accomplished by the Hull Society since its formation. It has been my privilege to take part in every exhibition of Chrysanthemums that has been held in this town, and in comparing one or two of the earlier shows with the magnificent Exhibition now being held it is impossible to avoid being struck by the marvellous change that has been brought about—a change not so much in the quantity as in the quality of the whole of the sections represented. If you ask me why these two Societies, with others that could be mentioned, have effected such an immense improvement in the quality of their exhibitions, and have exercised so beneficial an influence outside their own districts, I shall not have much difficulty in giving now a decisive answer. These Societies, recognising their duties, have adopted a proper standard, and appointed men to award the prizes who they know would carry out their wishes. This is a point upon which I do not propose to speak at any length. It is obvious that the chief object of an exhibitor in staging his plants or flowers is to obtain the highest place possible upon the prize list. In endeavouring to attain this object he necessarily presents his specimens as nearly as he can in a condition most likely to satisfy those entrusted with awarding the prizes. If the judges hold correct views on the points of perfection in the several types the exhibitor will not lose sight of the importance of finish; but when, on the other hand, the merits of the specimens are estimated by measurement, we have as a consequence at subsequent exhibitions huge plants furnished with indifferent flowers, and in the cut flower classes blooms distinguished by their large size and coarseness.

Speaking generally, too much importance is at the present time attached to mere size, and especially is this the case in estimating the relative merits of stands of cut blooms. Regularity of outline, brightness of colour, and solidity, count for little with many growers and some judges as compared with diameter. Consequently not only are the large varieties allowed to completely overshadow the smaller but not less beautiful kinds, but when the same variety comes into competition a comparatively large coarse bloom is placed before one a size smaller, but well finished. Compilers of schedules as well as judges have something to answer for in bringing about the unsatisfactory state of things that prevail in some centres. In their anxiety to assist exhibitors with a view to having their stages well filled, they allow duplicates to be so largely shown that in the case of the incurved section many of the most beautiful varieties are being slowly, but surely, pushed out of cultivation. It is not rare to meet with classes for twelve in which not more than nine varieties are required, and it is quite common to ask for only eighteen varieties in classes for twenty-four. The result in one case is to have about three types represented, and in the other not more than six or seven. I have nothing to say against the Queen of England and its numerous sports, but when they form one-half of the collections of twenty-four they necessarily overpower the smaller varieties. Moreover the exhibition, so far as the incurved section is concerned, loses much of its interest and attractiveness. If I am told there is a difficulty in filling a stand of twenty-four with distinct varieties, I must reply that the difficulty is not so great that it cannot be readily overcome. In confirmation of this assertion I would direct attention to the fact that comparatively small societies, such as those at Walton and Staines, insist upon the twenty-fours being distinct, and have seven or eight entries all more or less good. If the exhibitions are to be made useful to cultivators and attractive to the general visitors we must make them as varied as possible, by encouraging exhibitors to stage all the good varieties, whether large or small. Although the great preference that has of late been shown to mere size has most injuriously affected the incurved, what has been said with reference regarding high quality as of primary importance applies equally to all the sections. It is just as easy to shut out of the exhibitions the smaller Japanese or Anemones and encourage coarseness as in the case of the incurved.

There is yet another matter that has a general application, and that is freshness. In the case of all the sections freshness is essential, and the want of this important quality frequently places boards of blooms at a great disadvantage in a close competition. Without freshness it is impossible to have the colour at its best, and although many cultivators and some judges fail to recognise the fact, to stage each bloom in its true colour is of the highest importance. It should be remembered that it is no part of the duty of judges to take into consideration what the

blooms were a week or ten days before the date of the exhibition, or what they would have been some time afterwards had they been allowed to remain until they had attained their full development. The duty of the judges, as I understand it, is to make their decision according to the condition of the blooms when presented to them, and exhibitors who have their blooms at their proper age on the day of the show will stand the best chance of winning.

Passing on to a reference to the several sections, the incurved as representing the most perfect type may well have precedence. If we accept as one of the first principles the assertion that the incurved flower should be perfectly globular, we have in the Empress of India and its several sports a model for form, but a model varying so much that it affords scope for variation in taste and much greater scope for variation of skill in producing it. We are told that a globe is unelegant and meaningless by those unable to appreciate the graceful curves of a perfectly finished bloom of the variety mentioned as a model or one of its progeny. But I will not pause to discuss this point, but at once state

the exhibitor. Blooms belonging to the incurved group so well represented by Madame C. Audiguier and Comte de Germiny should have their florets more or less incurved, not regularly, as in the case of such varieties as the Queen of England, but sufficient to show their true character. Comte de Germiny is generally presented in its true character; but of the many hundreds of blooms of Madame C. Audiguier that I have had to examine during the season, not more than half a dozen have been in fairly good condition. They were very poor last year, and although the seasons may not have been particularly favourable, we must look to the cultivator for an explanation of the thin, flabby appearance presented by the majority of blooms, both this year and last. In the reflexed Japanese class, of which Elaine is still the best type, a certain regularity of form is of necessity admissible, and the florets should be somewhat regularly arranged and more or less reflex, although not with the formality characteristic of such varieties as Dr. Sharpe and King of the Crimson. To the multitude of varieties that belong to the third section, it is not possible to do more than refer in general terms. I

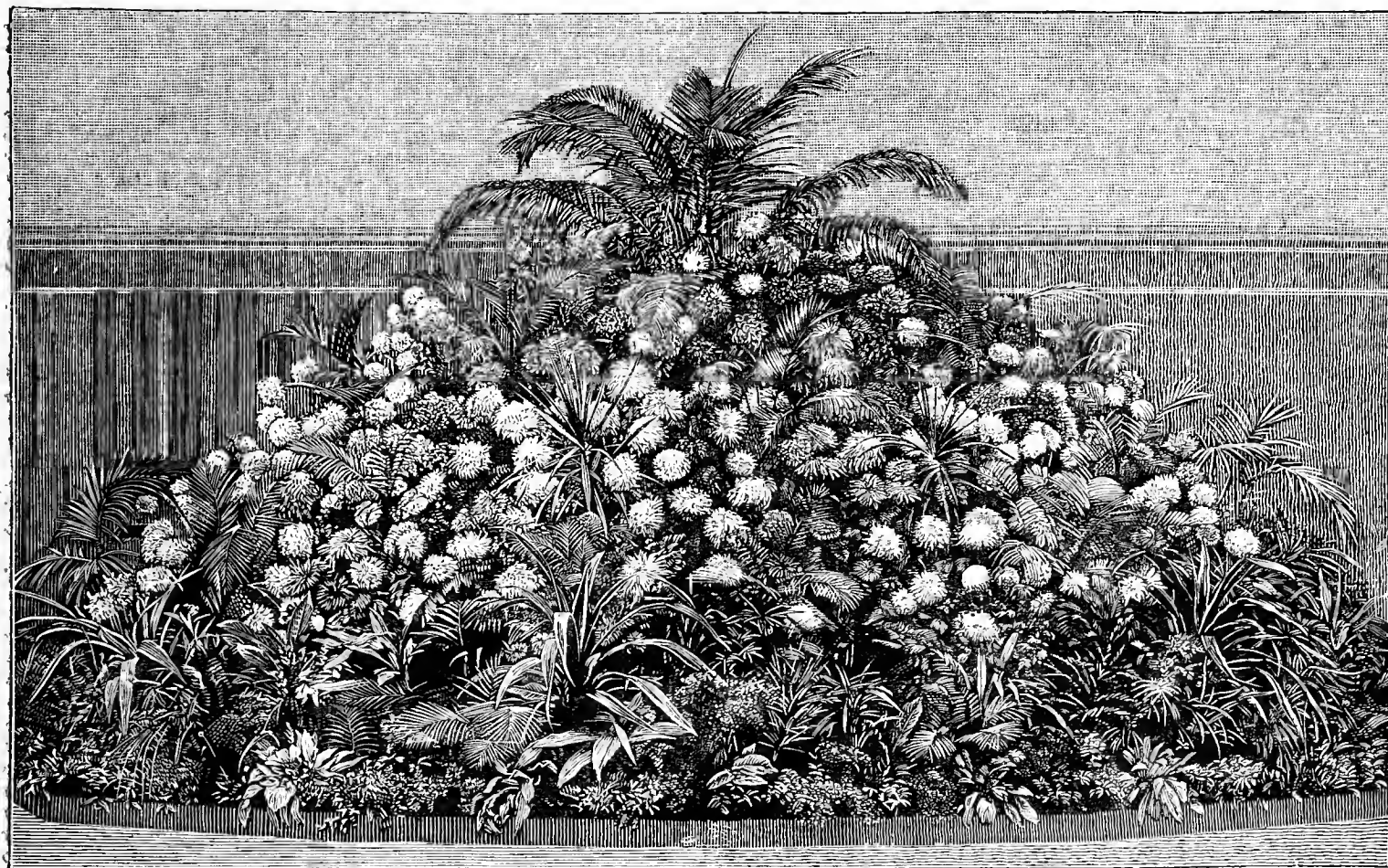


FIG. 62.—A PRIZE GROUP. (See page 483).

that the more closely your bloom approaches a spherical form, the greater will be the chance of success. The flowers should be well filled up in the centre, and the florets incurved regular, and be well rounded at the points, as indentations are disfigurements. Solidity is of hardly less importance than regularity of outline, for thinness is at once detected by the trained eye, and will heavily discount the chances of the blooms taking a high position. A common defect in the incurved is flatness, which means a low crown, a poor centre, a sharp shoulder, and a want of substance in the florets, and this default can only be avoided by good culture, as the art of the dresser will not do much to remove it.

The Japanese varieties, which rank next in importance, present a great diversity of form, but for our purposes they can be divided into three well-marked groups. These groups are the incurved Japs, the reflexed Japs, and those with florets more or less twisted. In the first and third of these groups large size is undoubtedly of importance, provided it does not, as in such varieties as Condor, Etoile de Lyon, and Mrs. F. Thompson, pass into coarseness. Size is of less importance in the reflexed Japs but it must not be overlooked. In all the sections fulness and decisiveness of colour are essential, for blooms that are thin or ineffective in colour cannot possibly render service of much value to

have already stated that the blooms should be full and bright in colour, and it will now suffice to say that each variety should be presented in its true character, as represented by the finest types at the exhibitions. I would strongly recommend prominence being given to such distinct varieties as Belle Paulc, Madame C. Audiguier, Boule d'Or, Edwin Molyneux, Stanstead White, and Grandiflorum. They usually carry more weight than flowers of more regular shapes, and I hope the quaint and fantastically formed flowers will ever continue to have proper value attached to them by judges, so greatly do they contribute to the interest of the exhibitions.

To speak of the reflexed varieties at any length is unnecessary. They are as a class very unsatisfactory, for although a hundred years have now elapsed since the introduction to Europe of the reflexed there are not half a dozen varieties that are even fairly good. Christine and its sports are very coarse, Elsie and Cullingfordi are erratic, and it is not difficult to produce blooms of Chevalier Damage that will throw inexperienced judges off their guard and ensure disqualification for the collection, as happened at one of the metropolitan exhibitions this season. The proper form of the reflexed bloom is a half globe, and it should be free from any trace of thinness or confusion in the centre.

The florets should be flat, free from notches at the top, and regularly recurve. The larger the blooms the better, provided they are free from coarseness. In many instances size is regarded as all important by both exhibitors and judges, and preference given to flowers that represent a liberal use of stimulants rather than culture of the highest class.

We have now three distinct types of Chrysanthemums with Anemone centres, and these, as you are all aware, are known as large Anemones, Japanese Anemones, and Pompon Anemones. These all agree in having an Anemone or cushion-like centre, surrounded by a fringe of ray florets arranged regularly or otherwise according to the section. In the large and the Pompon Anemones the ray florets should be flat, arranged more or less horizontally, and be circular in outline, and the disc or cushion be high in the centre and regular in outline, forming as near as may be a half globe. In the Japanese a high full centre is essential; the ray florets may be long and drooping, much curled, or otherwise irregularly arranged, but the fringe should be full. I would direct special attention to the importance of having the centres of the Anemones well developed, for although some judges prefer huge flowers with perhaps a ghost of a centre because they show "growth," whatever that may mean, flowers perfect in all their parts will in the majority of cases win. But I would not unduly exalt the centres, the rays also must be more or less perfect, and I would caution exhibitors against the practice which very generally obtains of staging old flowers having good centres from which the discoloured ray florets have been stripped, for when so mutilated they cannot possibly obtain many points.

One other section remains to be noticed, and that is the Pompons, which, if not particularly popular at the present time, are so useful as to well merit attention. I would, in referring to them, protest against the encouragement that is given to blooms of excessive size. This is done in some cases by allowing thinning, and in others by stipulating that the blooms shall be shown singly. I would submit that it is a waste of money to offer prizes that have the effect of encouraging cultivators to attempt to produce blooms of Black Douglas that will resemble undersized flowers of Julia Lagravère, or flowers of President that bear a resemblance to those of Progne when indifferently developed. Pompons should in all cases be presented in as natural a condition as possible, for when unthinned and staged in bunches as cut from the plant, they not only give visitors a better idea of their elegance and beauty, but are decidedly more attractive. I know but few hold the same opinion as myself, but I hope that as more correct views obtain, we shall have a reform change effected in the manner in which the Pompons are now presented at the public exhibitions. But so long as the schedules are prepared and the prizes awarded on the present lines, exhibitors have no alternative but to continue to grow the Pompons in a manner opposed to the development of their true characteristics.

THE CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

MRS. S. A. LEE, Chiswick, has, with the object of encouraging original research and observation, again very kindly offered a sum of £10 10s. to be distributed in prizes for essays on horticultural subjects, as defined below. The competition in Classes 1 and 2 is open to all the ordinary members of the Association who have paid their subscriptions for the current year before January 30th, and attended ten meetings of the current session before February 28th. A first prize of £2, a second prize of 30s., and a third prize of £1 will be awarded in Classes 1 and 2, and prizes of books to the value of £2 will be awarded in Class 3, provided the essays are, in the opinion of the adjudicators, worthy of the prizes. All members may send in essays in one or both of Classes 1 and 2, but no member shall take more than one prize, excepting members under twenty-one, who may take one prize in Classes 1 and 2, in addition to any prize in Class 3. The competition in Class 3 is limited to the members of the Association under the age of twenty-one who have paid their subscriptions before January 30th, and attended ten meetings of the current session before February 28th.

All essays bearing a motto or *nom de plume* must be delivered to Mr. J. Barry, R.H.S. Gardens, Chiswick, not later than February 28th, 1890, each essay to be accompanied by the name and address of the competitor in a sealed envelope bearing the *nom de plume*, such envelope not to be opened until the Judges have made their awards, and at a meeting of the Committee. Where a Committee contributes more than one essay the same *nom de plume* to be used for each essay, and all essays to be written on white paper. The adjudicators will, in accordance with the express wish of the generous donor of the prizes, be instructed to pay due consideration in making their awards to neatness of handwriting, correctness of spelling, and accuracy of grammar, as well as to the information contained in the essays. Should the prizes in one or more classes not be awarded, the adjudicators will be empowered to award extra prizes in other classes, provided the essays are deserving

of the awards. Competent Judges will be appointed to adjudicate upon the essays. The prizes will be distributed at the annual dinner of the Association at the close of the session.

Class 1.—The selection and cultivation of hardy herbaceous and alpine plants. First prize, £2; second prize, £1 10s.; third prize, £1.

Class 2.—The best essays on any horticultural subject, at the discretion of the competitors. First prize, £2; second prize, £1 10s.; third prize, £1.

Class 3.—The best reports of the work of the session. The prizes in this class will consist of suitable books on horticultural subjects, to the value of £2—viz., first prize, £1; second prize, 12s. 6d.; third prize, 7s. 6d.



MANNERS AND CUSTOMS—A CATALOGUE COMMENTARY.

ON looking over a good collection of Roses a keen observer, even if he be a novice in Rose culture, cannot fail to be struck by the difference observable in what is called "the habit" of each sort, for there is almost endless variety in wood, leaves, thorns, strength, and manner of growth, apart from the blooms themselves. He would also probably notice a good many of what he would call "red" Roses, very much alike to his untrained eyes in general appearance, and he might wonder how they could all be distinguished apart. But if he would remember that a good shepherd can tell every member of a large flock of sheep by a diligent study of their faces, or even that any English-grown Apple can be correctly named at the office of this Journal, he will readily understand how a fairly representative bloom of any Rose can be accurately distinguished by a thoroughly expert rosarian.

Descriptions of the different varieties of Roses are to be found in the catalogues issued by growers for sale, and these (like the Roses themselves) will be found to be of different sorts—from the one deficient in descriptive power, which copies verbatim from another of reputation (and might well do worse) to the one which suffers from a superabundance of originality, and repeats a list of H.P.'s with entirely different descriptions on the very next page. A good many of these catalogues have full and for the most part good descriptions of the different varieties; but the colours of some sorts, especially of Teas, are very difficult to place before the eyes of ordinary readers in language that they will clearly understand, for some are naturally variable in their tints and others come much fuller in colour when grown strongly.

The novice student of these seductive pamphlets will require only a little knowledge of human nature to enable him to take a fair discount off the description given by the raiser himself of any one sort; and he may possibly, the following summer, be inclined sometimes to agree with those medical authorities who state that many people are colour-blind without being aware of their infirmity; but at any rate he will find it advantageous to be acquainted with some slight vagaries in catalogue-English which custom has sanctioned. In this language "medium-sized" means "small," and "pretty" generally implies the same. In growth "moderate" means weakly, "free" describes a plant rather weakly but branching, and "vigorous" stands for ordinary growth. A "good pot Rose" would probably show that it would not stand bad weather, a "nearly full" one shows an eye, and one would probably be doing no injustice in supposing that a Rose which is "good when caught right" is bad as a rule.

These remarks are not meant as a sneer at the catalogues and descriptions of our professional rosarians. Some of these are most carefully and laboriously compiled from a long and wide-spread knowledge of the various sorts, and, especially in the account of colours (which is naturally the principal part of their descriptions, and with which, as a rule, I shall not meddle), are certainly much better than anything of the sort that I could do. But it is a matter of common knowledge how unwise it is for a beginner to select his sorts from those blooms which take his fancy at an exhibition; and there are also drawbacks to the cultivation of a good many of the show varieties, which we cannot expect to find noted in catalogues for sale. For, among Roses, there are a great many "little ways" belonging to the different tribes, families, and individuals, and I would like to point out some of these for the guidance of novices who may be thinking of purchasing Roses for planting, for many an otherwise excellent Rose has a nasty custom of doing this or that or the other, which just prevents its being as good as it might be.

I propose going through an ordinary list of Roses, taking, not every one grown (I had a catalogue sent me the other day from a continental firm containing 1909 different varieties!), but most of the best known, following the N.R.S. catalogue in the main, mentioning only those which I have grown myself, and taking particular notice of those which have especial manners or customs. Besides private habits, either good or bad, of their own, Roses may be faulty in any of the following points:—An unhealthy constitution, weakness of growth, deficiency of foliage, special tendency to mildew or orange fungus, liability to be stained, gummed, or rotted by rain, or burnt by the sun, or to "come" badly, malformed, quartered, or divided, deficiency in stoutness and

smoothness of petal, fulness of centre, shape, colour, lasting qualities and size, a lack of freedom of bloom, or of good qualities in the autumn; and in Teas, besides a much increased impatience of rain, there is the peculiar fault of several, and, alas! some of the best, of not bringing blooms to full perfection when grown as dwarf plants. We know, however, that many Roses behave very differently according to the soil, the climate, the situation, and the treatment; and I hope, therefore, that any readers of the Journal who do not agree with my descriptions will write and say so, that we may have a better knowledge of the actual capabilities of the several varieties.

HYBRID PERPETUALS.

Abel Carrière (Verdier, 1875).—Of uncertain growth. Often makes strong secondary shoots, yet refuses to grow strong in the spring. Foliage second-rate; rather liable to mildew and orange fungus, but can stand a little rain. Often "comes" bad; not divided, but malformed, and "anyhow;" a small per-centage only of the blooms generally arrive at perfection. Not particularly good in petal; but the shape, partly imbricated, is good when you get it. Beautiful colour, among the darkest; a fair bloom to last, and not of the largest size. Like many of the dark Roses, it requires hot dull dry weather, for sun will cause the colour to "burn"—i.e., turn brown, and rain is more or less hurtful to all Roses. Not good as a free bloomer or as an autumnal Rose.

Abel Grand (Damaizin, 1865).—A useful garden Rose of very strong stiff hardy growth and fine foliage. Not liable to mildew or to suffer much from rain. Flat open shape, soon becoming weak in the centre; thin petals, not lasting, good size, strong of constitution, and will do well in lightish soil; very good in freedom of bloom and as an autumnal. Has "sported" once or twice. "Bessie Johnson" is identical, except that the colour is lighter.

Alfred Colomb (Lacharme, 1865).—Fine growth and foliage in good soil, but not on poor or light land. Not very liable to mildew, and can stand some rain. Generally comes good, but occasionally "divided." (I ought perhaps here to mention that the term "divided" is used when a rift appears in the outline of the centre or point. This seriously mars the bloom to a florist's eye, and from a show point of view. No "dressing" can counteract it, or so fold the petals as to hide it. In the worst cases four such rifts appear, and the bloom is then said to be "quartered.") A fine typical shape, what the N.R.S. catalogue calls "globular, high centre," which is a good description of this particular Rose in its perfection; extremely good in petal, centre, size, lasting qualities and colour. A first-class show Rose, late, fragrant, free in bloom, and good as an autumnal, with clean, smooth-skinned, handsome wood, striking well as a cutting. The flowers are often very like Marie Baumann, though the wood and habit of the plants are very different. Benoit Comte and Marshal P. Wilder are also similar in bloom, though the foliage of the former is very distinct. Comtesse de Casteja (Margottin, 1882), which I have not personally grown, is the only seedling of this fine Rose that I know.

Alfred K. Williams (Schwartz, 1877).—Makes long strong shoots as a maiden or as a cut-back at times on good soil, but has not a strong constitution. Thorny, with good foliage, liable to mildew, but will stand some rain. A Rose of great reputation, because the blooms nearly always come perfect, forming first-class examples of the popular "imbricated" shape—(i.e., something after the form of a Camellia). Not a very good one to last, or of the largest size, but prominent as a show Rose. Cannot be called first-class as a free bloomer, but is pretty good as an autumnal. The plants are not hardy or long-lived, and fresh ones should be budded every year, as though some do well as cutbacks, maidens are more to be depended upon. Grand Mogul is said to be a seedling from this beautiful Rose.

Annie Laxton (Laxton, 1869).—A good hardy garden Rose, with good growth, very fine foliage, and strong constitution. Not liable to mildew or much injured by rain. Useful as an early one, a free bloomer and fair autumnal. The blooms are of fair size, but not often of a good regular shape, and the petals are somewhat thin.—W. R. RAILLEM.

(To be continued.)

BULLFINCHES.

If "J. T. E." (page 476) expects to catch bullfinches now on the trap-cage principle, I am afraid he will be disappointed, as I have only caught one in a fortnight, making a total of thirty-eight in a few weeks. Now they pay very little attention to the call of a decoy, and every week they will become more careless. If I were inclined to catch more I would use birdlime, but this, to a certain extent, means turning out with a call bird and a stock-cage to put fresh caught birds in, as described by me before.

In the extract printed from the *Worcester Herald* (page 459), Miss Ormerod, in reply to some of my remarks in a previous issue of that journal, appears to doubt to some extent the mischief these birds do by the following remark:—"I do not myself feel so sure as some writers that the bullfinch is so very injurious, and would much like that, before condemning him, a careful post-mortem of contents of stomachs of a few specimens should be made, to see whether the abstracted buds had, or had not, a maggot within them." I assure that lady, and all readers, that I am not in the habit of writing anything that I cannot substantiate, and I have watched these birds most carefully in their work

of destruction, and that they take every bloom bud within reach indiscriminately, and that a single bird will nip out twenty-five buds per minute (by my watch), discarding all outside, and swallow only the flower and fruit in embryo. The stomachs I have frequently examined with a magnifying glass, and have one lying before me now that I have used as an illustration at many lectures on horticulturists' enemies. If time and space permitted, I should have been pleased to have made a few remarks *re* "Caterpillar Plague" (page 459). I have taken thousands of the moths on grease-bands, and other ways; but I have patented what I consider an improvement on any method yet invented in stopping the moths and other pests to fruit growers.—J. HIAM, *Astwood Bank*.

NORTH AMERICAN SHRUBS.

THE first warm days of April invite us to the woods in search of the *Arbutus*; a glimpse of green rewards our expectant eyes, and we move the leaves carefully from the gnarled and twisted Oak roots, only to find tiny clusters of buds with no gleam of pearly white or rosy pink among the glossy leaves; we turn away disappointed and look down the hillside toward the meadow, and lo, a bush all covered in creamy, dainty blossoms greets us. We step carefully over the patches of *Hepatica* and *Erythronium* just peeping out of the moist clayey soil, and try to break off the slender, grey, smooth twigs, and we twist and pull and bend in vain; truly it might be called rubber instead of Leather Wood, this fairy blossomed *Dirca*, the earliest flower of our New England woods. The *Houstonia* only is brave enough to lift her pale blue face in the warmest and sunniest meadows, and the *Saxifrage* is trying to bloom in the sunny crevices of the rocks. But the sun mounts higher, day by day, and the *Andromeda*, in the swamps, hangs out her thousands of pearly bells to lure the bees, and the Alder tags shake their golden pollen on the pale green sphagnum at their roots. Here and there, in the woods and in the thickets along the river banks, the snowy flowers of the *Amelanchier*, or *Shadblow*, unfold in a night, the petals of one species faintly tinted with pink. Hardly a leaf has yet unfolded, but one by one the delicate translucent petals float off seemingly like snow-flakes through the air, and the bush stands forth clad in emerald green, many a leaf with crimson veins and margins which disappear as it attains its full size.

The warm days of May come swiftly, and the beautiful flowering *Dogwood*, *Cornus florida*, flings forth its banners to the sunshine, every great, white, four-petalled involucre looking straight upward as if proud of its clusters of greenish yellow flowers, which no one notices; irregular, of course, it is, whoever saw one that did not have two large and two smaller petals, making the blossom oval instead of round? Then that brown, shrivelled spot, with a dash of crimson in it that is always on the margin of each petal, and is not an imperfection, as it seems, but an individuality. In New England we have *Cornus alternifolia*, with its loose cymes of pale buff flowers; *Cornus sericea*, with dull purplish branches, and young shoots of dark red; *Cornus paniculata*, with grey bark and flowers in cone-like cymes and nearly white; *Cornus stolonifera*, which sends out horizontal branches, and whose flat cymes of yellowish flowers are in pleasing contrast to the velvety green, full grown leaves. These species of *Cornus* are all hardy, bear transplanting well, and without exception very ornamental.

Scattered about on the hillsides, and more especially towards the coast, throughout New England, are the *Barberry* bushes, every leaf bristling with sharp points, but fragrant drooping clusters of yellow flowers in June, succeeded by oblong berries in September, which good housekeepers make into jelly. Another shrub, which is known by its glossy, very dark green leaves, is the *Prickly Ash*. Its inconspicuous greenish flowers appear about the 1st of May, before the leaves. Its numerous brown prickles make it well adapted for hedges. It grows rapidly, and its roots penetrate the ground for a long distance.

Everyone knows the common *Sumac*, with its yellowish-green panicles of flowers in June, and its cone-like heads of scarlet berries in early autumn. One of our largest shrubs, growing when standing alone to a height of 20 or more feet, its greyish, woolly-looking branches crowned with its spreading, palm-like mass of foliage, bright light green in summer, and blazing scarlet in autumn, making it always conspicuous, especially when growing in masses, as it generally does. Here and there, in patches in the swamps, grows the shrub called *Poison Sumac*, with its disagreeable odour, and easily distinguished by its red, wingless petioles, and its smooth, greenish-yellow berries. *Rhus Toxicodendron*, or *Poison Oak*, is a weak shrub with brownish grey berries, and is not noticed as often as *Rhus radicans*, or the climbing species, which is usually called *Poison Ivy*, and is very often taken for *Virginia Creeper*, but from which it may be distinguished by its three leaflets, the lower one nearly always differing from the other two; its leaves are dark and shining, frequently tinged with red, and in early autumn it takes on very brilliant hues of gold and flame; its berries are white; its small, greenish flowers appear in May.

In hilly woods we sometimes find the *Maple Bush*, *Acer spicatum*, with its pretty clusters of greenish flowers, light grey bark, and coarse, sharply pointed leaves, which are both three and five lobed in the same bush. We seldom notice the twining shrub or climber called *Climbing Bittersweet*, *Celastrus scandens*, during the summer, as it is generally hidden amongst the foliage of the trees in the edges of the woods, but after frost its clusters of scarlet seed vessels, nestled in the three-sepalled, orange calyx, are quickly seen and gathered to brighten the Christmas

evergreens; they retain their colour, grow hard and firm, and, if kept from insects, will keep for a long time.

One of our smallest shrubs is the pretty little *Ceanothus*, or Jersey Tea; it is found almost everywhere in New England, and in the West. In June every little branch is terminated with a dense panicle of minute white flowers, the branches growing from the axils of the leaves, which are soft and downy on the under side, and are said to have been used for tea during the Revolution; its large, red root is used for colouring.

The far-famed English Ivy is not hardy in New England, except, perhaps, in sheltered situations near the coast, but wherever it can gain a foothold it grows rapidly. The American Ivy, or Virginia Creeper, *Ampelopsis quinquefolia*, flaunts its rank growth from cathedral walls and stately churches, making them veritable poems in stone, clings lovingly to the dear old homesteads, fringes the small windows of the cottage in the outskirts, drapes the mossy rails of the old farm fences, catches the sunshine through the golden days of summer to throw it forth from its leaves in autumn in great splashes of colour, rivalling the most brilliant sunset. The dusky, purple berries hang in clusters to tempt the birds who pick them, one by one, till only the rosy pink pedicels are left to drop off after the leaves.—FLORENCE I. W. BURNHAM (in *Vick's Magazine*.)

(To be continued.)

QUEEN WASPS.

ALTHOUGH I have not secured queen wasps in the manner referred to by Mr. W. Strugnell (page 463), I have secured some thousands from having an opportunity of building next spring by taking every nest known of in the neighbourhood up to the time of the breaking up and distribution of the colonies in the autumn. I have one nest of *Vespa germanica* I dug out very carefully, which is quite complete, and I consider there would have been at least 250 queens to look out for snug winter quarters. The bulk of these appear to be alive, and quietly taking their six-months nap under my control instead of starting new colonies.—J. HIAM.

AT page 463 of this Journal Mr. Strugnell states some experience in securing queen wasps between the wall and window frame of a fruit room, and asks if any others have secured them in a similar manner. I have frequently found queen wasps concealed between the walls and frames of windows, but by far the greater number will be found between the layers of timber when in stacks, or the bark of trees, nested in one another, but with space between sufficient for wasps to creep into for the purpose of hibernating. "The low buzzing sound" heard by Mr. Strugnell has interested me. I was not aware that wasps, or any other hibernating creature, emitted sounds when in a state of hibernation. If this is so, then it strengthens "A Hallamshire Bee-keeper's" opinion on that question, and bees may after all be hibernating, although we hear them huzzing aloud during the cold of winter. I should be glad if a few more facts about this were forthcoming, so that I might be induced to turn my attention to the subject.—W. T. Blantyre.



ORCHID NAMING.

IT is generally understood that the Royal Horticultural Society is formulating a system of Orchid naming that is intended to remove some of the inconsistencies at present existing. That being so, why is it not made known to all the Fellows of the Society interested in the matter? as a subject of such importance cannot be too widely discussed. Any decisions arrived at from a partial consideration of the matter, or without consulting the large body of Orchid growers, will be certain to give great dissatisfaction and prove extremely discreditable to the R.H.S. I would suggest that forms be sent out to the Fellows in the same way as for the recent *Chrysanthemum* Centenary, or as is being done now to procure information respecting the effects of fogs. From returns thus obtained a good idea of the general feeling would be secured. The project is a good one, but will be spoiled by hasty or too restricted attempts at settlement.—AMATEUR F.R.H.S.

THE HALL AND FRASER FUND.

MR. FRED. HORSMAN of Colchester sends the following additional list of subscriptions received or promised for the above fund. Messrs. Sander & Co., £5; Mr. John Seden, 10s. 6d.; Mr. John Cowan, £1 1s.; Mr. Howell, 10s. 6d.; Mr. E. Jenkins, 5s.; Mr. W. White (Dorking), 5s.; Chas. Toope, Esq., £1. Collected by Mr. H. B. Smyth's stand at the National Chrysanthemum Show:—Mr. W. Holmes, 5s.; Mr. W. Howe, 2s. 6d.; Mr. Crute, 2s. 6d.; Mr. F. Wilson, 2s. 6d.; G. Mayor, Esq., £2 2s.; Mr. J. Roberts,

2s. 6d.; J. H. W., 1s.; Mr. R. Davis, 5s.; Mr. Don, 2s.; Mr. Ballantine, 2s. 6d.; Mr. S. Deards, 2s. 6d.; Mr. Brangwin, 2s.; Mr. W. May, 2s.; Mr. J. Reynolds, 2s.; A. B., 2s.; J. M., 2s.; Mr. Jos. Arnold, 2s. 6d.—£4 2s. 6d.

A meeting of the Committee having in hand the organisation of this fund was held at Messrs. Protheroe & Morris's Rooms on the 29th ult., Mr. Harry J. Veitch presiding. The Hon. Secretary, Mr. Fred Horsman, stated that the total amount received and promised up to that date was about £410, and it was unanimously resolved that the list should be closed on December 12th, by which time it is desirable that all promised subscriptions should be sent in. The Committee will meet again on the 13th to determine the disposal of the fund.

DENDROBIUM AUREUM.

A FINE specimen of the above *Dendrobium* may now be seen flowering in the Victoria House collection. The plant is growing in a 10-inch basket, and is bearing 179 flowers, some of the pseudobulbs having twenty blooms. The sepals and petals are cream coloured or yellow; the lip has a velvety disc, golden yellow streaked and veined with crimson lines, recurved at the tip. It is not one of the most showy *Dendrobiums*, but should be grown on account of its sweet scented flowers, the perfume resembling that of Violets combined with Primroses. The same plant carried eighty-six flowers last year.—H. COOPER.

THE SHELL-BARK HICKORY.

THE Hickory is purely an American tree. The eight species which are known all belong to the southern half of the North American continent, with the headquarters of the genus, as represented by the greatest number of species in any one locality, in the valley of the Red River in Arkansas, with one species pushing far south along the Mexican Sierra Madre. No other country or region of the earth can boast of an indigenous Hickory tree, although it is quite within the bounds of possibility that one, and perhaps several species may still be found in the unexplored mountain districts of central China, so similar are the floras of our eastern States and of eastern Asia in actual composition, and so closely related in their descent from remote common ancestors. The Hickories, at least some of the species, are among the most valuable trees in the world. There has never been a boy or girl brought up in any part of the country east of the Missouri River who has not early learned the value of the Pecan, or the Hickory Nut, or the Mockernut; and the wood which some of these trees yield has no equal, and certainly no superior, for certain purposes. There is no wood at once so tough and strong and true. It is the Hickory wood in its handle which has carried the American axe round the world, driving, wherever it is known, all other axes out of the market; and it has made possible those light carriages, which, in turn have made possible the American trotting horse, one of the marvels of these modern times, and probably the best example of what can be accomplished, by careful breeding and persistent selection, in the development of domestic animals for a special purpose. No other tree is known whose wood is tough enough and strong enough to stand the strain imposed upon the American trotting-sulky, and without the modern sulky and its heavier forerunner, neither breeding nor training could have produced that race of horses which every American looks upon in his heart of hearts with joy and admiration. As a nation we owe much to the Hickory tree, and we have good and just reason for being proud of it. It is a tree known to many people; next to the Oak and the Pine, more Americans know the Hickory tree when they see it than any other of our trees. That is, they know generally the Hickory without distinguishing the different species, which is hardly surprising, since botanists themselves are often perplexed over questions concerning the proper limitations of these species. Nor are these questions ever likely to be settled quite satisfactorily, for it is probable that several of the species are inclined to hybridise one with another, and so produce those individuals of doubtful characters which are the despair of people who expect to be able to fit exactly every plant they encounter with the printed description of it in some book.

The Shell-bark Hickory is considered generally the most valuable of the genus. The nuts, of course, are not esteemed as highly as Pecans, and they are, perhaps, rather inferior to and considerably smaller than those of a western representative of the genus (*Hickorius sulcatus*), the wood of which is equal to that of the Shell-bark. Still, the Shell-bark, perhaps, is the tree which people have in mind generally when they think or speak of a Hickory tree; and the peculiarity of the bark which separates into great thick, loose scales, gives to this tree a distinctive appearance, which makes it easily known and recognised.

The Shell-bark, as it is now seen in the eastern States, is generally an obconical, square-topped tree, with rather small branches, produced low down on the trunk. Such trees have grown generally since the land was first cleared for settlement and agriculture, and there are not now many people living here at the east who, unless they know the forests of the Mississippi Valley, and more especially those found on the higher Alleghany Mountains, have an idea of what a large Hickory tree is, growing as it grew naturally before the white man disturbed and changed the natural condition of this country. The Shell-barks in

southern Indiana, Mr. Ridgway notes ("Proc. U. S. Nat. Mus.," 1882, 77), are sometimes 150 feet high, with trunks 4 or 5 feet in diameter, and bare of limbs for 70 or 80 feet; and even larger trees can be found in the western and still almost untouched forests of eastern Tennessee and western North Carolina. But these large trees are doomed, and before many more years have passed every Hickory tree of sufficient size and proper quality will have been sacrificed to supply the ever increasing demands which the industries of men make on this tree. The area of the region in which the Hickory grows to perfection is really small in comparison with the demand for it; and when no substitute can be found for a particular wood it must in time be exterminated, however abundant the natural supply, unless measures are taken to increase and perpetuate it artificially. And it would appear that of all our trees the Hickory is the one which should be planted wherever suitable land can be spared for it; and it should be protected and cherished, in view of the ever-increasing demands the world is making and must continue to make on this tree.—(*The American Garden*.)

CHRYSANTHEMUM SHOWS.

ALTHOUGH we have been enabled by the kindness of numerous correspondents in various parts of the country, in addition to our own staff, to give the reports of over sixty Exhibitions, readers still remind us that some have been omitted, and local newspaper reports are sent, which we are unable to utilise. To all who have assisted by sending brief original notes we express our thanks. Successful displays have been held at Wimbledon (Surrey), Balham, West Hartlepool, and the following:—

CARDIFF.

THE third annual Show of the Cardiff and District Chrysanthemum Society was held in the Park Hall on Tuesday and Wednesday in last week. The Mayor of the town, Mr. Alderman Saunders, opened the Exhibition with a brief speech. The large hall was well filled with the various exhibits, many of which were of more than usual merit, and the Show, on the whole, was a decided advance on the two former efforts. The entries in the cut bloom classes were numerous and the competition was close, especially in the open classes. In the amateurs' class the competition was also very close, and some magnificent blooms were staged. The class for cottagers also brought to notice some very praiseworthy efforts. A strong feature in connection with this Show were the groups, which in the open class occupied spaces of 80 square feet and in the amateurs' 60 square feet. In both classes the exhibits were extremely good, and the two classes formed banks along the centre of the hall, the whole forming a magnificent display of bloom. Fruit and vegetables also were numerous shown, the entries for Apples being especially large, and some splendid dishes were staged. There were also classes for Ferns, Bouvardias, Cyclamen, Primulas, Selaginellas, and plants for table decoration, all of which added something towards making a show.

Cut Blooms.—Twenty-four distinct named varieties, Mr. W. Treseder, nurseryman, Cardiff, was first; Mr. W. J. Ireland, Singleton, Swansea, second; and Mr. C. H. Williams, Roath Court, third. Twelve incurved, Mr. Ireland first and Mr. W. Waldron, Llandaff (gardener, Mr. H. Rex), second. Twelve Japanese, Mr. Ireland was again first with a magnificent dozen. For groups arranged for effect Mr. W. Treseder was first, Marquis of Bute (gardener, Mr. A. Pettigrew) second, and Mr. C. H. Williams (gardener, Mr. A. Bishop) third. In the classes for plants Colonel Hill, C.B., M.P., Marquis of Bute, and Mr. C. H. Williams were the principal winners, the latter exhibitor showing a splendid example of Pompon Snowdrop.

Fruit.—Collection of five dishes. First, Colonel Turberville (gardener, Mr. G. Hawkins); second, Mr. H. W. Thompson, Llandaff (gardener, Mr. Ryder). For twelve Apples, dessert, first Colonel Turberville, second Mr. C. Waldron, third Mr. G. M. Treharne. Twelve Apples, culinary, first Mr. C. H. Jenkins, second Marquis of Bute, third Colonel Turberville. Twelve Pears, dessert, first Colonel Turberville, second Marquis of Bute, third Mrs. Kelly. Twelve Pears, culinary, first Colonel Turberville, second Marquis of Bute, third Mr. Ireland. For a collection of Apples, twelve dishes, first Mr. C. E. Jenkins, second Mr. W. H. Thompson, third Mr. Ireland. Collection of Pears, six dishes, first Marquis of Bute, second Mrs. Kelly. Collection of vegetables, six varieties, first Mr. G. M. Trenarne, second General Lee, Dinas Powis, third Marquis of Bute. Special prize, offered by Messrs. Wood & Sons, and grown by their manures, stand of twelve Chrysanthemum blooms, first (silver medal) Mr. W. H. Thompson. Wreath, not to exceed 20 inches, first Mr. Phelps, Cardiff; second Mr. Treseder. Cross, first Messrs. Perkins and Son, Coventry, who were also first for the best hand bouquet and gentlemen's buttonholes.

SUDBURY.

THE autumn Exhibition of this Society was held at the Corn Exchange, Sudbury, recently, and for a provincial show was a really good display. The schedule comprised seventy-two classes, a great many of which were solely for fruit and vegetables, and as might be imagined, being in the midst of an agricultural district, these were shown of high excellence. The ladies' classes for bouquets, epergnes, and sprays was most keenly contested, and formed a most interesting feature in itself, some sixty different exhibits being staged in the six classes set apart for them, and further interest was thrown into these classes that they were judged by ladies of rank and high social position. Several very

neat groups were shown both by professionals and amateurs, the first prize group being exhibited by Mr. Dance, gardener to Mrs. Lowe, Gosfield, and was remarkable for their exceeding dwarf habit, the tallest being scarcely 3 feet high at the back, while the front was only 18 inches; yet these very dwarf plants carried good fresh flowers, and the colours very well arranged, perhaps a little too like a mould, they were so evenly placed. The collection from the garden of Col. Burke took second honours, while in the amateur groups Mr. A. Berry and Dr. Holden shared the honours, with capital examples of the well known varieties. What a marked improvement there is now throughout the country in both growing and grouping Chrysanthemums than formerly. In almost every exhibition it has become a leading feature. Several fine groups of foliage plants were staged, the best arrangement being contributed by Mr. Mitchell, who had some good Crotons, Poinsettias, Heaths, Eranthemums, and Ferns. This was indeed a very tasteful display. Mr. Cundy was a good second.

In the several cut bloom classes Mr. Dance, gardener to Mrs. Lowe, was almost invariably placed first for highly meritorious collections, showing that his productions were ahead of the other exhibitors, and that he possesses the spirit and ability of a good grower. Other successful exhibitors were Mr. Cundy, Sir W. Parker, Col. Burke, Mr. Mitchell, Miss Faulkner, and Mr. Gentry. In the amateur cut bloom classes Dr. Holden, Dr. Turner, and Mr. A. Berry were the principal winners. Primulas were numerous staged, and the collections contained several beautiful strains. Fruit was also good, especially Apples and Pears, most of which was highly coloured. Vegetables throughout were grand, whether exhibited by professional gardeners, amateurs, or cottagers, and taking the Show collectively it was a most interesting Exhibition, and during the afternoon well patronised by the *élite* of the neighbourhood. During the evening, when the price was lower, it was crowded; there was no approaching the table decorations, bouquets, &c. Mr. De la Cour, the Hon. Secretary, laboured hard to supply the many wants required, ably assisted by Dr. Holden and others of the executive. We should like to see another year the name and address of the gardener on the prizecards. This would give more interest to strangers.

BEVERLEY.—NOVEMBER 27TH.

THIS Exhibition was held on the above date in the New Gymnasium Hall, which was recently opened with a grand bazaar. The building is large and lofty, and admirably adapted for large public meetings, flower shows, &c. This was the seventh annual Exhibition of the Society, and the President, Vice-Presidents, and Committee, in conjunction with a hard-working Treasurer and Secretary, are to be congratulated on the success of their labour, for notwithstanding the sudden outburst of almost Arctic weather, and the late date of the Show, there was a goodly array of exhibits, and in many of the classes the competition was exceptionally keen. In the open classes for plants, fine, large, well-flowered, and nicely trained plants (though a trifle *passé*) were exhibited by Mr. T. Smith of Norwood Nursery, Beverley; T. Crust, Esq., St. Mary's, Beverley; Mr. H. Taylor, Newland Nursery, Beverley; Mr. R. Thirk, Beverley; and Mr. G. Hancock, Beverley.

In the open classes for cut blooms Mr. T. Smith was first for twenty-four (twelve incurved and twelve Japanese), having good fresh blooms, well set up, of both sections. Mr. H. Taylor was a good second. In the classes for twelve cut blooms, distinct varieties, J. A. Hudson, Esq., J.P., Longcroft, Beverley, won with a capital lot, being closely followed by Colonel Hodgson, Westwood Hall, Beverley. In the smaller classes, J. A. Hudson, Esq., J.P., almost "swept the deck" of premier honours, although the stands of both Col. Stracey-Clitheroe, J.P., of Hotham Hall, and Col. Hodgson, were in many cases very close on the heels of the winner. The wreath competition (Chrysanthemums only) was an excellent class both in number and merit, Mr. G. Cottam, nurseryman, Cottingham, Hull, taking the coveted position. In bouquets, Messrs. Taylor of Newland and Cottam of Cottingham were far ahead of other exhibitors.

In the fruit classes, Col. Clitheroe, J.P., scored both firsts for black and white Grapes with bunches of Gros Colman and White Tokay, the first-named bunches having large berries, good colour, and capital bloom. W. F. Wrangham, Esq., J.P., Hotham House, was a good second in both classes. The last-named gentleman also took the principal prizes for Apples and Pears with exhibits of large size and good quality. Mr. H. Adams of Beverley was a successful exhibitor in those classes. The Judges were Mr. Charles Lawton, gardener to Colonel W. H. Harrison Broadley, Welton House, Brough, East Yorks; and Mr. R. Sturdy, gardener to Charles Sykes, Esq., West Ella, Hull. The Hon. Sec. of the Society is Mr. Chas. Wellbourn, who, whilst being thoroughly energetic in carrying out his duties, was also most courteous to all.

BIRKENHEAD AND WIRRAL.

THE above Society held their third annual Show in the Town Hall, and the Show was a success, considering it was a wet day. The Grapes were good, as also were cut blooms, and in the fruit classes there was a keen competition.

Cut Blooms.—In the open class for twenty-four incurved, in not less than eighteen varieties, Mr. G. Burden, gardener to G. Cockburn, Esq., Lingdale Lodge, Cloughton, was first with even blooms of good substance and bright in colour. The stand comprised the following varieties:—Empress of India (2), Queen of England (2), Lord Alcester (2), Alfred Salter (2), Princess of Wales (2), Miss M. A. Haggas (2), John Salter, Princess of Teck, Miss Violet Tomlin, Emily Dale, Mrs. Heale, Jardin des Plantes, Jeanne d'Arc, Lady Hardinge, Sir Stafford

Carcy, Princess Beatrice, Refulgens, and Golden Empress. Mr. J. Wilson, gardener to J. E. Reynolds, Esq., West Derby, Liverpool, was a good second. Mr. G. Malcomb, gardener to J. Tomkinson, Esq., Tarporley, Cheshire, was third. In the open class for twenty-four Japanese, in not less than eighteen varieties, Mr. G. Burden was again first, showing good examples of the following:—Boule d'Or (2), Stanstead White (2), Avalanche (2) very fine, Sunflower (2), Ralph Brocklebank (2), Madame C. Audiguier (2), Pelican, Belle Paule, Thomas Stephenson, M. Bernard, Madame Baco, Sarah Owen, Marguerite Marrouch, Mr. Gardiner, Jeanne Délaux, Madame J. Laing, Meg Merrilies, Edwin Molyneux—a good bright collection. Mr. J. Wilson was second with very fine examples of Balmoreau; Mr. G. Malcomb third with smaller but fresh flowers. In the open class for twelve incurved Mr. G. Lyon, gardener to J. H. Kenion, Esq., Egerton Park, Rock Ferry, was a good first; Mr. T. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall, Liverpool, second; Mr. T. Rawson, gardener to H. R. Rodgers, Esq., third. In the open class for twelve Japanese, Mr. E. Broadey, gardener to H. L. Jones, Esq., Horton Grange, was well first; Mr. C. Waring, gardener to Mrs. Aitken, Princess Park, Liverpool, a close second; and Mr. H. Holford, gardener to Mrs. Cornelius, Aigburth, Liverpool, third.

In the local classes the chief prizetakers were Mr. G. Burden, Mr. E. Broady, Mr. D. Mason, gardener to W. Bingham, Esq., Claughton, Mr. G. Lyon, Mr. Charles Smith, gardener to D. Wilson, Esq., Claughton, Mr. M. Clary, gardener to R. Hobson, Esq., Bromboro', Mr. T. Rawson, Mr. J. Hay, gardener to G. Irvin, Esq., Mr. J. Brown, gardener to G. Webster, Esq., Upton, Mr. T. Williams, Mr. T. Pink, gardener to J. J. Sealby, Esq., Mr. Smith, gardener to T. L. Pelling, Esq., Oxtou.

In the fruit classes (open) the leading exhibitors were Mr. J. Barker, gardener to G. Raynes, Esq., Rock Park; Mr. J. Bounds, gardener to A. L. Jones, Esq., Aighurth, Liverpool; Mr. Hannagan, gardener to R. C. Naylor, Esq., Horton Hall; Mr. F. Ferguson, gardener to Mrs. Paterson, Rock Ferry; Mr. R. Brownbill, gardener to G. Fowler, Esq., Rock Ferry; Mr. G. Butler, gardener to T. Drysdale, Esq., Mossley Hall, Liverpool; Mr. S. Winkworth; Mr. M. Quirk, gardener to W. Porter, Esq., Thingwall; Mr. G. Worker, Mollington; Mr. J. Salisbury, gardener to E. Osborne, Esq., Newton Chester; Rev. H. C. Sturges, Leominster; Mr. A. Williams, Leominster.

In other classes for miscellaneous plants the prizes were secured by Mr. W. Thomas, gardener to G. E. Grayson, Esq., Claughton; Mr. J. Richards, gardener to Mrs. Friend, Rock Park; Mr. J. Brown; Mr. S. E. Haines, gardener to M. Laird, Esq., Claughton; Mr. J. Grindley, gardener to J. Billington Esq., Wallissey; Mr. M. Quirk; Mr. A. Price, gardener to F. Jevons, Esq., Claughton; Mr. S. E. Haines. Of miscellaneous exhibits a good arrangement of plants around the orchestra came from Mr. Johnson, South Grove Nursery, and a grand collection of Apples from Messrs. Dickson, Chester. The success of the Show is due in a measure to the kindness of T. L. Pelling, Esq., the President, taking an active part in the management, and to the able Secretary, Mr. A. Haughton.

BARNSELY.

FROM its contiguity to the hills and moors of the Pennine range, and from the smoke of its collieries, coke ovens, glassworks, and other industries, the town has been dubbed not inaptly "Black and Bleak Barnsley," which is sufficiently indicative of conditions not the most favourable to horticultural pursuits: nevertheless the local "Paxton Society" and its numerous patrons by their energy and perseverance get together two exhibitions in the year of horticultural produce of which any town might feel proud. In September the working men make a grand display of cultivated vegetables. Again in November they deck their "People's Hall" with Chrysanthemums, and through the place in their thousands to admire, criticise, and add to their enthusiasm. This Chrysanthemum Show was the best ever held in Barnsley. On entering the room this was at once apparent both in the increased entries and the quality of the exhibits. In the open class for twenty-four cut blooms, twelve Japanese and twelve incurved, £5 and National certificate was offered for the first prize, which was keenly contested for by seven exhibitors, Mr. Daniels, Hallcroft, Mirfield, taking first position with high class heavy blooms as follows:—Incurved—Back row: Empress of India, Queen of England, Lord Alcester, Alfred Salter. Middle row: Nil Desperandum, Golden Empress, Lord Wolseley, Emily Dale. Front row: Miss M. A. Haggas, Mrs. Shipman, Mr. Bunn, Princess of Wales. Japanese—Back row: Meg Merrilies, Boule d'Or, Madame C. Audiguier, Ralph Brocklebank. Middle row: Val d'Andorre, Stanstead White, Sunflower, R. Ballantine. Front row: Madame Baco, Florence Percy, J. Délaux, Avalanche. Every bloom of the above was remarkably well timed and at its best. Mr. T. B. Morton, Darlington, took second prize, showing fine examples, Lord Alcester, Princess of Wales, Lady Hardinge, Mrs. Heale, Empress Eugénie, &c., amongst the incurved. Belle Paule, Stanstead White, Condor, Etoile de Lyon were very conspicuous amongst his Japanese. Some of the incurved flowers being too young, with undeveloped centres detracted somewhat from the chances of this stand. Mr. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, was placed third, whose stand included fine examples of Japanese, but many were too old. In the class for twelve reflexed Mr. Morton was first, Mr. Daniels second, G. Burnley, Esq., Birthwaite Hall, third. Twelve Anemones.—Mr. Daniels first, Mr. Morton second, C. Simpson, Esq. (Mr. Kitchil, gardener), Ackworth, third. Bouquets.—Mr. Daniels first, Mr. B. Asquith, Barnsley, second, J. Dunk, Esq., Worsbro', third. Fruit.—Grapes, Black.—Mr. T. Kitchil first, Mr. G.

Hudson second, Mr. R. Sleightholm third. White Grapes.—Rev. W. Elmhirst first, Mr. T. Kitchil second.

In the local classes, Mr. Balanger was first for a well-arranged group of miscellaneous plants, Mr. Henshall, nurseryman, Barnsley, being second with a useful lot of decorative plants, but lacking colour somewhat. Groups of Chrysanthemums showed the necessity of more care in the details of arrangement. Mr. Henshall was well to the front, avoiding mistakes in this respect, and so won the first prize. W. Robinson, Esq., Barnsley, being placed second with fine plants carrying blooms of high quality, but faulty in arrangement towards the margin. In the smaller plant classes there was keen competition, the prizewinners being Messrs. Peel, Kenworthy, Goodyear, Tyas, Fever, Senior, Gratton, and Whitaker. For local class cut blooms, Messrs. Goodyear, Tyas, Balanger, Fever, Senior, and Peel.

PONTEFRAC.—NOVEMBER 28TH.

CONTRARY to what might have been expected, considering the lateness of the fixture and general earliness of Chrysanthemums this year, a bright, effective, and highly creditable Exhibition was provided in the Assembly Rooms of the famous old Yorkshire town on the date named. Several of the blooms had no doubt passed the zenith of their beauty, but it was surprising how many there were with which scarcely any fault could be found in that respect, while not a few were in all other respects excellent. In some of the cut bloom classes the competition was exceedingly keen; in the mixed classes the Japanese excelling in one, the incurved blooms in the other, and the true relative values of the collections could only be determined by the most careful point judging. This, however, was not the case in the open class of thirty-six blooms, in which Mr. T. B. Morton, Darlington, took a distinct lead with handsome and well staged examples in both sections. The stands also contained the two premier blooms—a beautiful Lord Alcester, and a fine example of the new and bright red Japanese W. W. Coles. The same variety has been exhibited under the name of W. W. Coules, and whichever rendering may be correct the bloom in question must be recorded as one of the most effective of the season. Condor and M. E. A. Carrière, both white, were also exceptionally fine. Among other new varieties exhibited by Mr. Morton, Beauty of Castlewood was admired for its richness of colour; it is of the E. Molyneux type, and apparently quite distinct. Mr. W. Clough, Keighley, was second in the above class, his stands containing several remarkably good blooms.

The next important class was for twenty-four blooms in the two chief sections, the first prize being a silver cup, Mr. T. W. Tew of Carleton winning it in one of the keenest of contests, Mr. R. James of Bads-worth Hall being a dangerously close second. Mr. Tew also secured the leading position with twelve incurved blooms, and Mr. Jackson with twelve Japanese. Mr. C. H. Simpson of Ackworth exhibited well in the Chrysanthemum and other classes, winning several prizes. Bouquets, wreaths, sprays, and exhibits of that nature surpassed those seen at many greater shows, Messrs. J. & R. Calam, Wakefield, and Rev. G. Haslam, Brotherton, being the chief prizetakers.

The plants exhibited were generally such as are usually seen in conservatories, or not formally trained. There was room for improvement, and some of the exhibitors learned that the judges did not attach the greatest value to the largest plants in the largest pots, but recognised merit in culture as displayed by small plants with healthy foliage as well as fresh blooms. Groups, both of Chrysanthemums and miscellaneous plants, are usually good at Pontefract; and in the former section the first prize group of Mr. Wm. Bell, gardener to J. Rhodes, Esq., Syddale Hall, was highly meritorious, the plants being both well grown and tastefully arranged—one of the best groups of the year. Mr. W. Jackson, Ackworth, was the chief prizewinner in the miscellaneous class, with a neat creditable assortment. There was good competition in many other classes, which cannot be enumerated. Fruit was fairly well represented, and amateurs' collections of vegetables worthy of high praise. The district is famous for vegetables, and more particularly for Liquorice culture, many acres being devoted to the crops, which are said to be profitable.

The Exhibition was opened by the Mayor, Mr. Alderman Rhodes, the eighth year in which he has been elected to the high office; and Mr. Glover, the Secretary, with able and willing assistants Messrs. Sheen, Maddox, Hillahy, and others, worked assiduously in making the Show and proceedings agreeable to all.

BARTON-ON-HUMBER.

THE Barton and District Chrysanthemum Society held their second annual Show in the Oddfellows Hall on the 27th November, when there was a good display of cut blooms, especially in the open classes, and some excellently arranged groups, whilst the efforts of the ladies with bouquets and table decorations were highly meritorious. Open classes, twenty-four blooms, twelve incurved and twelve Japanese, distinct.—First, G. B. Guthrie, Esq., Waltham Hall (Mr. J. Walker, gardener); second, E. Smith Paull, Esq. Twelve incurved.—First, Mr. E. Smith; second, Mr. H. Taylor, Newland. Twelve Japanese.—First, G. A. Carr, Esq., Waltham Grove (gardener, Mr. W. Welton); second, Mr. E. Smith; third, Mr. H. Taylor. Twelve blooms, any variety.—First, Mr. E. Smith; second, G. A. Carr, Esq.; third, Mr. H. Taylor. Group of Chrysanthemums.—First, Mr. J. H. Crowder; second, Mr. W. Briggs; third, Mr. H. Kirkby. Six Chrysanthemums, distinct.—First, Mr. W. H. Upplehy, Bonby; second, Mr. J. Skelton. Best specimen plant.—First, Mr. C. J. H. Crowder; second, Mr. J. Skelton. Twelve Primulas.—First, Mr. C.

Leeson, Wrawhy; second, Mr. W. H. Uppley. Amateurs classes were well filled. Mr. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, Hull, acted as Judge.



FRUIT FORCING.

VINES.—*Houses Started Early in November.*—In the earliest house, whether the Vines are in pots or planted in borders, the temperature will need to be increased to 60° at night in mild weather, 55° in severe weather after the buds break, gradually increasing so as to have it 60° at night when the Vines are in leaf, 65° by day in severe weather, and 70° to 75° in mild weather, with moderate ventilation. The evaporation troughs need not as yet be charged with liquid manure, provided there are fermenting materials in the house, but if not the troughs should be filled with the drainings of the dung yard or stables, and cow hyres, avoiding, however, that of pigstyes or urinals. Failing those use guano, 1 lb. to 20 gallons of water, which is also suitable for watering Vines in pots, the water being applied at the temperature of the house. Tie up the Vines in position as soon as growth has well commenced, and before the shoots are so long as to be liable to be damaged in the process. Sprinkle the house two or three times a day in clear weather, avoiding a close moist atmosphere on the one hand and a dry one on the other. Dishudding should not be practised until the fruit shows in the points of the shoots.

Houses to Afford Grapes in May.—The Vines that are to afford Grapes in May must be started at once, nothing helping more than a bed of leaves and stable litter placed on the floor of the house and turned daily. The outside border should have the needful protection from cold rains and snow, two-thirds of leaves to one of stable litter, affording a less violent but more durable heat than dung. Provided the outside border were covered with bracken, straw, or litter in early autumn, so as to throw off the wet, the temperature will be considerably warmer than that of the borders exposed, and in their case covering with hot litter may be dispensed with. The inside borders should be brought into a thoroughly moist state by applying water, and in the case of Vines that are at all weakly give liquid manure at 90°. Start with a night temperature of 50° in severe weather, 55° in mild weather, and 65° by day, except the weather be very severe, when 55° will suffice, not exceeding those figures until the growth commences. Maintain a moist atmosphere by syringing occasionally, but excessive moisture excites the emission of aerial roots from the rods. Depress the rods of young Vines to the horizontal line or below it to insure the regular breaking of the buds.

Midseason Houses.—The Vines from which the Grapes have been cut should be pruned; indeed it is decidedly advantageous to prune the Vines directly the leaves have fallen, any Grapes still hanging having been cut and placed in bottles of clear rain water with a piece of charcoal in each. The Grapes will often keep better than on the Vines, as the temperature in the room is more equable than commanded in a vinery. Keeping Grapes hanging after the leaves have fallen may not be prejudicial to Vines unless prolonged to a late period, yet the greater extent of young wood keeps the sap more or less in circulation, and there is a certain amount of waste going on which cannot take place when the Vines are pruned. Prune, therefore, directly the leaves are down, and bottle any Grapes remaining, thin skinned varieties not requiring the maturing so necessary for Gros Colman and thick-skinned varieties generally. In pruning adhere to the system that has proved satisfactory. If the Vines are in good condition they will in all probability give sufficiently large bunches if pruned to one at most two eyes, good useful Grapes for everyday use, so essential when the table must be supplied with fresh fruit. But if large bunches are wanted, or the Vines from weakness do not afford bunches so large as desired, leave more growth, only be careful to select sound, round, well developed buds on firm ripened wood; aim, in fact, at finish. Large bunches are invariably defective of the finish of medium size bunches. Vines that afford well finished examples pruned to one bud will give a larger bunch and of equal finish from the second bud. If the soil be rich, loose, and plentiful, the chances are the shoots or canes will be gross, long-jointed, having large thin-textured leaves; the buds large, pointed, or if laterals are encouraged flat, and these may give the sensational bunches which justly have their merits calculated by weight. If on the other hand the roots are in a firm but favourable rooting medium, causing an increase of ramification, then the wood will be stout and short-jointed, the leaves thick and leathery, and the buds at their base will be round, plump, and well matured. It is, of course, assumed the foliage has full exposure to light for the solidification of the growth as made, and that cultural requirements are granted in full measure. Let the Vines be dressed, the house thoroughly cleansed and everything put into order, so that there need be no hurry to put things straight. Keep the house as cool as possible so as to insure complete rest.

Late Houses.—Every precaution should be taken against damp.

The most prolific cause of Grapes not hanging well is drip, it being useless striving to keep Grapes beneath a leaky roof, as a single drop of water getting inside a bunch of Grapes is sufficient to spoil it, though the decay may be only a berry, which, being in the interior, is not detected until the disaster is so spread as to spoil the bunch. Remove all leaves as they become ripe, affording only sufficient fire heat to exclude frost, keeping at 40° to 45°, and close the house in damp weather, and seeking to insure a dry, cool, and equable temperature.

Strawberries in Pots.—The plants introduced to the vinery, Peach, or other forcing house, should have the drainage scrutinised, making sure that it is free, and the loose surface soil removed, and a top-dressing given of dried cowdung or horse-droppings rubbed fine with the hands or through a sieve, adding about a twelfth part of steamed bone-meal, or some other approved fertiliser, well incorporated, then watering it with a rose-watering pot, so as to bring it into a moist state, for if placed on dry it washes off in watering the plants. The pots may then be placed in position after removing any decayed leaves, making sure that there is no deficiency of water at the roots, for the old leaves will not show signs of a deficiency of water until the soil is very much too dry for healthy root action, therefore rap the pots; a practised hand will readily detect by the sound which plants are needing water. Noble, La Grosse Sucrée, and Vieomtesse Hericart de Thury are good varieties for early forcing.

CUCUMBERS.—Winter plants must not be allowed to carry too much fruit. Unless they are extra strong remove two-thirds at least, removing also the male blossoms and tendrils with any superfluous shoots and bad leaves, but do not stop the growing points overmuch for the next few weeks, affording water moderately—a supply twice a week will suffice. Cucumber plants growing in pots or boxes will require water oftener, with liquid manure occasionally. A night temperature of 65° to 70°, falling to 60° in severe weather, 70° to 75° by day, advancing to 80° or 85° with sun, will be suitable. The plants will require moderate earthing at the roots from time to time, taking care that the soil has been previously warmed, press it firmly, but not hard. The bottom heat should be kept steady at about 80°. Atmospheric moisture will require to be moderate, damping only on bright mornings or early in the afternoon. If a night covering be afforded of mats or frigidomo to the glass it will be highly advantageous, but it must not remain on by day to the exclusion of light, every possible ray of which the plants must have. Remove old foliage and exhausted growths from the autumn fruiters, but do not overstop the growing points, avoiding overcrowding and especially overcropping. Fertilise the flowers during a continuance of dull sunless weather.

PLANT HOUSES.

Stephanotis floribunda.—Plants that have been pruned, cleaned, and had a complete season of rest may now be started into growth. A soaking of tepid water should be given, and the temperature raised to 60°. During the early part of the day syringe lightly, unless plants are beneath that would be injured by water falling upon them. In this ease the moisture of the atmosphere must suffice. If there is any mealy bug on the plants syringe thoroughly with petroleum and water of the strength advised a few weeks ago. It is much easier to destroy bug now than after the plants commence growth. Plants in pots that are full of roots should have a top-dressing of decayed manure. Those at rest must be kept moderately dry at their roots, and will be perfectly safe in a temperature of 50°.

Medinilla magnifica.—Where the wood has been thoroughly ripened by exposure to full sunshine during August and September the plants may be removed to the same temperature as advised for Stephanotis at rest. To flower them well it is necessary they have complete rest. Thrips is the greatest enemy this plant has to contend against, and should be destroyed by syringing the plant over a tank at intervals of a fortnight with a solution of tobacco water.

Gardenias.—These plants need watering with care, and strong stimulants in their present stage of growth must not be used, as more harm than good will result. If the flower buds have formed and commenced swelling maintain a temperature of 65°. If starved, overfed, syringed with strong stimulants, or checked in any way the flower buds are likely to be deformed. Plants that are not yet showing their flower buds will be safe in a temperature 5° lower. Tepid water may be used for supplying to the roots and for syringing.

Dracenas.—The atmosphere of the structure in which these are grown must not be kept too moist, or the points of the leaves that are highly coloured are very likely to damp. The temperature at night should range from 60° to 65°, according to the weather. Less water will be needed at their roots. Plants that have been used for decoration in rooms and other positions, and have been damaged so that they are useless except for stock, should be kept perfectly dry to harden and ripen the root portion of their stems. When cut up green and soft they are liable to decay early in the season. If kept dry for a month they will be ready for cutting up and starting into growth in brisk heat early in the year. Plants that have been grown purposely for yielding stock may be gradually dried to harden them.

Justicia flaricoma.—Where these plants have not been pushed forward place some of them in a temperature of 60°. They will be found very useful after many of the autumn flowering plants are over. The remainder of the stock will do for the present in any light structure 5° lower.

Begonia manicata.—If grown in a cool house the flower stems are only just showing, but will push up rapidly in a temperature of 60°.

They will be useful for the conservatory by the time they are in flower, but should be gradually hardened for removal to that structure just before the flowers are fully expanded. If removed direct to the lower temperature the flowers are very liable to fall. The remainder of the stock, and also those of *B. hydrocotylifolia*, which will be more useful in two months' time, may still be kept in a temperature of 50°. They must be kept rather dry at their roots, the atmosphere being in the same condition, and what watering is needed should be done early in the day, being careful to throw no more about than is absolutely necessary.

Nepenthes.—The points of any shoots that have been growing vigorously may be taken out or shortened back a leaf or two as the case may be. If done now they will soon start again, and they will again form pitchers freely. It is a mistake to allow these plants to extend above four or five leaves before they are pinched. Those which have been allowed to extend upright several feet in length should not be cut down for another six weeks, when cuttings can be inserted with some certainty of rooting them. Brown scale will infest these plants, and must be removed with the sponge. Thrips are sometimes troublesome at this season. The best means of destroying them is to syringe the plants over a tank with a weak solution of tobacco water. Less water will be needed at the roots, but be careful the soil is not allowed to become dry. Syringe on favourable occasions.

Cleaning Plants.—Every attempt should be made to clear plants from insects at this season of the year. They bear stronger insecticides now than during the growing period, and if every opportunity is devoted to this important work endless labour during the busy season of the year will be saved. Plants are often ruined or disfigured when cleaning is too long postponed. Merely cleaning them and then leaving them until they are infested again is no method of eradicating insects. They should be thoroughly cleaned, and then examined and syringed, as the case may be, at intervals of a fortnight or three weeks until every trace has been destroyed. It is surprising what labour is saved in the end by the adoption of energetic measures for a few months in succession.

THE BEE-KEEPER

QUEEN REARING IN RELATION TO HYBERNATION AND WINTER DYSENTERY.

(Continued from page 476.)

HEDDON, as I have said, contends that all his queens are reared in a "natural" manner. How he can assert this, and yet keep moving his old stock hive about to get rid of the bees puzzles me, as the old stock hive is never moved when bees are existing in a state of Nature. I am sorry to say that it is the fashion in the States to make any statement that appears to floor an antagonist, and I am afraid that some of our bee friends are not always quite proof against its influence, notwithstanding their good intentions, which I admit.

Dampness, bad ventilation, bad food, and cold have all been described as prime causes of winter dysentery; but wherever it has broken out I have been able in most cases, by learning how the queens were reared, to note that cheapness of production rather than high quality had been the ruling guide, Heddon placing the value of a queen as capital in a hive of bees as low as two cents., and Mr. W. L. Hutchinson, editor of the "Bee-keepers' Review," who teaches nearly all that Heddon advances, and is almost always a heavy loser from winter dysentery, says "one queen is as good as another in a hive if she has descended from the right stock." He contends that the manner of rearing has very little to do with it, though he seems to incline to the view that cells reared on the swarming impulse are the best to depend on for fine queens. Neither he nor anyone else who practises queen-rearing in America believes that after the cells are sealed it makes any difference where they are matured. The cells are nearly always cut out and hatched in the weakest nuclei, or they are hatched in "nurseries," which are of two kinds; one is heated by a lamp, and the other is a number of little boxes covered with wire cloth, in which a sealed queen cell is fixed. These boxes are fitted in a frame, and then hung in a hive of bees for the heat of the bees to hatch out. As the bees cannot get near the cells, the only heat they get is what is diffused in the hive, which I have proved is never equal to the temperature of the cluster on the brood (90°), but is often 10° to 20° below, to say nothing about the chilling the cells get while being cut out

and fixed in these cages. If we were to ask many of the people who rear their queens so to deny their cattle, chickens, or other young stock of all the warmth and shelter possible to give them they would laugh at us, and yet these do not require nearly so high a temperature for their full development as does an embryo bee.

In the natural course of things queens are reared in a hive; first, when the old queen is to be superseded; second, when preparing to swarm; and third, when the old queen dies or is killed. When the first takes place the stock is mostly very strong, and as they do not swarm the cells get thoroughly developed and matured, the first queen hatching killing the rest. If such a stock has not swarmed that season it does not do so until the next, and it proves to be a wonder in results. How often has it been noted that the best stock of a season was one that had not swarmed the year before? It was this one fact that led me to study the matter, and to think that the way the queens were reared had more to do with the matter than was suspected. Let us note the old stock hive after it has thrown three or more swarms, how often do the bees die of dysentery, or, it is remarked that it has "swarmed itself to death." Let us now consider what really takes place. We all know the shape of a queen cell, how it always stands out away from the comb, and hangs downwards even when reared on worker larvæ on the middle of a comb, and how the bees prefer to build them in passage ways, &c., where they can cluster round them. Has no one ever suspected that Nature designed that they should be reared in that way, so that the bees could cluster all round them to keep them warm and moist, as they require more heat for their development than either drones or workers? How, then, can they be cut out and developed in a lower temperature without weakening the constitution of the queen?

After the first swarm, if the weather sets in cold, and nearly always after the second swarm, many of the queen cells are practically left unprotected, the development of the queens in them is therefore retarded, a worthless queen being the result. The same takes place when a cell is hatched in a nucleus, nursery, or in a hive depleted of bees, as by the Heddon system. Therefore I have laid it down as an axiom, that nothing but a worthless queen will result from any cell cut out, no matter how hatched, on account of the variation of temperature while it is being cut out, nor can queen cells be lifted up out of a hive for examination without chilling them.

In this Journal for July 18th I explained how queens were to be reared, and I also showed that though queens were required in large numbers, they could be had in any quantity two days old without cutting out a cell or opening the stock hive to get them, and that by giving the old stock hive fresh eggs from time to time, a supply of queens can be had all through the season, which was the result of a discovery I made in 1887.

I will here make another definite assertion—viz., that if good queens are required, or queens whose bees will always hibernate, the first swarms must always be returned at once to the old stock hive, having first removed the old queen (which, with a few bees, will make up a nucleus, and if early, they will build up into a good stock for winter), to look after and develop the queen cells, whether increase of stocks are required or not. Such a stock will swarm again with a young queen, possibly a dozen, all of which can be used if required, if able to fly. If these queens are put at the head of good colonies, their bees, after the second generation, will surely hibernate, no matter what kind of food there may be in their combs, if it is their own storing. The form or degree of hibernation will be equal to that of wasps, which, like hedgehogs, always show signs of life if touched; nor will they, while hibernating, eat any food; so that they practically winter on nothing, but being in full vigour and vitality, they consume their stores in brood rearing in the spring.

In the United States very many people are specially engaged in rearing queens for sale, hence in that part of the world they are

most troubled with winter dysentery; and as their hives are very thin, long, and shallow, and ill protected against changes in the weather, the queen cells are often ruined should a cold night or two follow close on the issuing of a swarm. There are some, such as the Dadants, who use large hives and never have swarms, who are never troubled with dysentery, as the queens are only reared when the bees do so to supersede the old one, at which time stock is always very strong. It often happens that a spell of cold weather sets in soon after swarming commences; when this happens just imagine an eight-frame Langstroth hive, single walls, 18½ inches long, 12 wide, and 9½ inches deep, inside measure, and remember that the natural shape of the brood nest is a ball, when a good idea of what heat the queen cells get may be readily obtained. Such queens never safely winter, while other stocks swarming later get warm settled weather while the cells are maturing, which results in better queens. Heddon has been much puzzled to make out why in two apiaries, exactly alike in every respect, the bees should die in one and live in the other; he will now see the reason is they did not all swarm at once, as a cold night or two followed on swarming where the bees died. This could in many cases have been rectified had the old queen been kept, but the practice is largely followed of replacing all old queens with young ones.—A HALLAMSHIRE BEE-KEEPER.

(To be continued.)

WINTER DYSENTERY.

THIS subject, referred to by "Hallamshire Bee-keeper" at page 476, opens up a new field of discovery, which is to be hoped will be the means of banishing from our apiaries the winter scourge. One thing certain, a great many queens that have been reared artificially have proved failures, but whether that was from defective digestion or not I cannot say. There are few bee-keepers who have experienced three and four years in succession when bees had to be fed constantly, at the end of which they died from no apparent cause whatever but that of being reared so long artificially and on artificial food. Loquacious, but inexperienced writers on bee matters, pooh-poohed the remarks, but could offer no other solution than the one stated by—A LANARKSHIRE BEE-KEEPER.



•• All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Phalaenopsis amabilis (*C. L., Bristol*).—Your plant "with a panicle 4 feet 7 inches long and twenty-nine flowers" is a good one, but we have seen many others with more flowers.

Chrysanthemums and Primulas (*W. G. F.*).—You do not say for what purpose the Chrysanthemum blooms were sent. If for naming we cannot deal with them in an imperfect condition. The Primula blooms arrived buried in dry wool, hence spoiled. We have had no inquiries of the nature you suggest, and do not admire the last sentence in your letter.

Ornamental Grass (*E. O.*).—*Stipa elegantissima* is a perennial, and will grow again next year if the plants raised from seed have not been crowded too closely together, in which case they not unfrequently decay. Unless the plants have space to develop in the summer they cannot be expected to survive the winter; indeed, the autumn rains often destroy them.

Dressing Chrysanthemums (*T. Gover*).—If by a "professional" dresser, you mean a man has been sent for and paid to dress the blooms for winning a prize in a local class, we cannot express our approval of the practice, because the winner of a prize so obtained may be rewarded for work that is not wholly his own, and other competitors who represent their own skill only are placed at a disadvantage. We shall be glad, however, to hear what others have to say on this subject. The prize to which you allude cannot be withheld under the schedule.

Plum Trees Cankered (*A. B. C.*).—Your trees have probably been weakened by the heavy crops they have borne, and the consequent deprivation from the soil of the constituents that are requisite for healthy growth. You say nothing about the soil. It probably needs lime, and a bushel to the rod of about 30 square yards would not be a too heavy dressing, and a supplementary application of superphosphate of lime and kainit, or bonemeal and nitrate of potash, half and half, at the rate of 5 cwt. per acre, or 2 ozs. to the square yard, would very likely do good. If the soil is of a dry nature, 2½ cwt. of salt per acre may be applied, but this is not advised for cold, wet land.

Baronne de Prailly and Comtesse de Beauregarde Chrysanthemums (*S. B.*).—The publication of your letter could not lead to any alteration in the case mentioned, and in respect to the future the varieties are admitted as distinct in the National Chrysanthemum Society's catalogue, and when both are exhibited, undoubtedly true to name, in the same stand, the stand ought not to be placed "out of the running." We have repeatedly seen them included in an exhibit, and no thought of disqualification arose in the minds of the judges. There is the possibility of a person receiving, growing, and staging what he believes to be either one or the other of these varieties, and of its not being named correctly; in such case, though honestly exhibited, disqualification would be justified, yet the exhibitor might feel himself "badly treated."

Materials for Mushroom Beds (*W. H.*).—Nothing equals manure collected from stables in which the horses are fed on dry food and have little medicine. It may be collected at weekly intervals, shaken out, mixed and fermented as described in the work to which you allude. Peat moss litter is not suitable for beds in the open air. The ventilators may be closed when the trial sticks cease to be hot, yet while they are distinctly warm. We cannot at present recommend a man. When you secure one who is competent he will inform you when he needs assistance. It would not be profitable to grow Mushrooms for ketchup during the hot summer months. A paper containing the article you wish shall be sent to you in the course of a week. The prices mentioned for Mushrooms are more than sustained.

Greasing Fruit Trees (*Plum*).—We do not approve of applying tar and grease, or anything of the same nature, directly to the stems of fruit trees for securing the insects that crawl up them for depositing eggs; but much prefer securing bands of sacking, paper, or anything suitable, and well smearing these with cart grease and oil, Stockholm tar and oil, or resin and oil, two-thirds of the former and one-third of the latter heated and mixed. The subject was referred to on page 459 last week, and you will find an article in the present issue. November is usually named as the right time for applying the bands; but it is questionable if some of the moths do not emerge long before then, and it is certain that November applications have failed in preventing the blossoms and leaves of fruit trees being devoured by caterpillars. Mr. Wright, in his prize essay on Fruit Culture, says the bands should be applied in September, and it is better to be a little too soon than too late, but the bands must always be "sticky" for holding the insects. You had better procure the work in question, which can be had for a shilling through booksellers, or by post for 1s. 3d. from this office.

Carnations in Pots Failing (*G. H.*).—The first essential for success is healthy cuttings, sturdy and strong. With weakly cuttings or growths from unhealthy plants it is almost impossible to produce satisfactory results. The next point is to allow no check to the plants in their early stages of growth, and especially must care be taken that they are not permitted to be rootbound in small pots before they are shifted into larger. The want of timely potting results in many failures. The plants ought to be shifted, always before the roots are matted, into 8 or 9-inch pots, or even larger, and be grown in frames during the early part of the season, and afterwards in the open air, great care being exercised in watering them. If the plants must be grown in small pots liquid manure is essential after the pots are filled with roots. But whatever system of culture is adopted good plants cannot be produced from bad cuttings.

Gardening for Profit (*A Young Horticulturist*).—You should have sent your name and address. It is undoubtedly true, as indicated in the pamphlet on "Allotments," that many workers in gardens have risen from a very humble to a commanding position through the exercise of good judgment and great industry. Men with the smallest of means have become men of wealth. It does not follow that all who have started in commercial gardening have succeeded in their object, for many have failed—some from one cause, some from another. No doubt men assist masters to make fortunes, and some of these men might possibly do better by "working for themselves," as you say, but others would not. However, all are free to act in the manner they think the most conducive to their own interests. You say you "would prefer to be your own master." This you can be, but it depends entirely on

yourself and surrounding circumstances whether you would be more successful than as an earner of wages. All soldiers cannot become generals, but the more they strive and the fewer mistakes they make the better position they attain in the army of competitors. It is the same in gardening and other vocations of life.

Pruning Vines (F. J.).—So long as satisfactory crops are produced from spur-pruned rods we do not perceive the advantage of running up young canes between them, and then in the autumn not knowing what to do with them. It is prudent to provide young canes when the old rods show signs of failure, otherwise the practice is apt to cause overcrowding of the foliage in summer, especially when the main rods are only 3 feet asunder. However, assuming the Grapes are not quite satisfactory we should saw off all the spurs close to the rods and about halfway up them, paring the rough surfaces smooth with a sharp knife; train the new canes up the old rods and shorten them at about 6 feet, or so far as the old spurs are removed; then next year the crop along the lower part of the roof would be from the young canes, that above from the spurred rods. The young canes can extend to the top of the house during the summer, training them where the foliage can receive the most light; then if they are satisfactory in the autumn the old rods can be cut out, and the roof will be covered with young bearing rods, the lower half two years the upper one year old. But in carrying out this plan judgment must be exercised. Some of the old rods may be much better than others, and the young canes vary in the same way, and it would be foolish to remove spurs in the manner suggested if the young canes provided were not in a condition to bear better Grapes than the old parts removed. We can only indicate the method we have found successful, and leave you to exercise your intelligence and discrimination in carrying it out. If it succeed, you may take all the credit; if not, we shall not be disposed to take the blame.

Mildew on Roses in Pots (S. S.).—We have seen the Roses grown under glass by Mr. Bardney, and none could be cleaner, healthier, or more floriferous. His practice is to syringe the plants every time syringing is needed with the softsoap solution. It is important that the plants are clean to start with, and all trace of mildew has been removed, as well as aphides. If used from the time the plants are started regularly and thoroughly each time syringing is needed the plants will remain free from mildew, red spider, and to a large extent from aphides. It is difficult to thoroughly syringe all the points of the shoots, and aphides will appear, which should be destroyed at once by slight fumigations. Mr. Bardney, in addition to the softsoap solution, is careful in ventilating the structure in which Roses are grown. Cold draughts on the young tender foliage are certain to produce mildew. If these are strictly avoided and the plants watered with care, neither giving too much nor too little, you need not fear mildew if you persist in the use of the softsoap solution. For a dozen years Mr. Bardney has had charge of a house of Tea Roses, and never had to resort to placing sulphur on the pipes. From the time he starts his Roses he is careful never to admit air until genial weather in spring. The precaution is also taken to stop the ventilators, so that cold air cannot make its way through to the plants. The solution of softsoap advised is recommended as a preventive of mildew, and by its aid with careful treatment the plants can be kept free from its destructive ravages.

Excrescences on Peach Tree Roots (W. H.).—The roots of Peach trees in light soils are peculiarly liable to form excrescences of the description yours present, and very often with a strong tendency to throw up suckers. There is not any disease that we can detect, certainly no fungus, and we can only attribute the excrescences to a deficiency of calcareous matter in the soil. The roots in most cases of this kind are liable to penetrate deeply, probably in quest of moisture, which is inadequately furnished by the hot, loose, and dry surface soil, and we find nothing equal to lifting trees in such soil in an unsatisfactory state and laying the roots nearer the surface, an addition being made to the soil of clay loam, or preferably clay marl, to the extent of a fourth to a sixth, according to the lightness of the soil, the clay marl being broken up into as fine parts as practicable and incorporated well with the soil. We also find that by taking out the soil of the border to a depth of 2 feet 6 inches and placing at the bottom not less than 6 inches thickness of old mortar rubbish freed of laths, &c., that the roots do not pass through it into the gravelly or other unfavourable subsoil, the lime rubbish being a source of that element, and at the same time a reservoir of moisture through the absorbent nature of the material. The old soil can be used again, rejecting, however, any gravelly portions or sand, and replacing with strong loam in addition to the clay marl already mentioned. The soil should be made firm, but not formed into puddle by working in a wet time, and with surface mulching of rather lumpy manure, judicious watering or feeding with liquid manure, as necessity dictates, better results may be expected.

Treatment of Vines in Pots (Hopeful).—It is a very common practice to raise Vines from eyes one year, fruit them the next, and then throw them away. The eyes that were inserted last February and grown on, producing canes 8 feet 6 inches long, and now in 7-inch pots, may be suitable for forcing, and as they are "covered with plump eyes their whole length and appear to be well ripened," they may be given a trial. They will succeed well if potted in the compost you name, the pots being well drained and the soil made firm, the sides of which may be loosened a little, but care must be taken not to injure the roots, and there must not be any attempt at uncoiling the roots, potting with the ball entire. It would have been better had the Vines been established

in the largest pots, being shifted from the small pots in which the eyes were struck into the 7-inch, and from these early in June, or when the 7-inch pots are fairly filled with roots, into the 12-inch pots, in which they should be fruited. You may employ native guano as a surface dressing mixed with soil, being careful not to use it too largely, and all waterings may be of liquid manure in a tepid—i.e., of the same temperature as that in which the Vines are growing. The concentrated manure is also a good fertiliser, and may be used advantageously, the danger being in applying the manures, whether solid or liquid, in too powerful doses. The Vines should be shortened to a length of about 6 feet, and the cuts dressed with styptic or patent knotting to prevent bleeding. If there are any cuts made by removing the laterals they must also be dressed. The best varieties for pot culture are Black Hamburgh, Royal Ascot, and Madresfield Court of black Grapes; and of white, White Frontignan, Buckland Sweetwater, and Foster's Seedling. For later work, those named being suitable for early forcing, all the varieties can be successfully fruited in pots.

Storing Ice (R. T.).—As you have not an ice house you may preserve ice in stacks. A correspondent has described the following method, which he has carried out successfully for a number of years. "After getting the ice in proper working order, and the weather continuing frosty, we begin to take it off the pond and cart it home to the stack, which is built on level ground, but has the advantage of being shaded by trees and bushes from the strong sunshine. We begin the stack by emptying the carts on its foundation; after which there are plenty of hands ready to begin pounding the ice with light woollen mallets sufficiently small to pack all large pieces firmly, thereby excluding from the interior of the stack as much air as possible. This should rather be a little over than under done. The people on the stack pound away till the whole is finished, and as the ice draws towards a point one or two drop off as the room for working becomes less, and begin breaking the ice at the bottom before throwing it up to those who remain. As the work proceeds we now and then throw a quantity of water over all, so as quickly to congeal the whole into a solid mass. We stack in this way from 100 to 110 cartloads every year, and it keeps perfectly well over twelve months, sometimes for a longer period, and we have to open the stack nearly every day during summer. Before covering-up, if the weather will allow us, we leave the stack exposed at least twenty-four hours to the frost; if otherwise we cover it at once. For covering we use dry wheat straw, covering to the depth of 48 inches at least, and all put on at once. We leave no air pipe through it, and we have no trouble in consequence of its heating or fermenting. We leave the whole in a conical shape, neatly strapped down to keep off the rain. This may be thought a waste of straw by some, but no less thickness of thatching will enable us to attain our object. The straw, however, will not be altogether lost, as a farmer will know well what to do with it after it has done duty on the stack, when he has his cattle in the fold. We have no faith in having only twenty or thirty cartloads in a heap, however well protected and stored. There should not be less quantity than a hundred loads for a stack if ice is required all the year round." If the ice is stored in a dry or freezing state snow may be mixed with it, but if stored during a thaw snow is a disadvantage. Snow alone cannot be satisfactorily preserved for any lengthened period.

Sheds for Mushrooms—Saving Manure (A. O.).—Undoubtedly sheds are advantageous in sheltering from excessive wet; but in "open sheds" the beds would have to be of the same thickness as those outside, and he similarly covered with litter for the retention of the heat that is requisite for the growth of the mycelium and the production of Mushrooms between October and March. It is doubtful if the erection of open, or even closed, cold sheds, would be a profitable investment, having in view the "saving of manure." Even if the sheds were supposed to justify the making of somewhat smaller beds than is advised in "Mushrooms for the Million," the manure thereby saved would not equal in value the outlay incurred in saving it. There must be sufficient of material for fermentation, and the heat thus generated must be retained for insuring regular crops of Mushrooms. Occasionally, indeed often, the heat is sufficient, and retained just long enough for the spawn to run freely in the autumn, but Mushrooms do not appear till spring. That is because the heat is allowed to escape on the approach of cold weather. It would be practically the same if the beds were not thickly covered in cold sheds. In structures in which a temperature of 55° to 60° is maintained, little covering is needed, and beds made of the best materials, from a foot to 18 inches deep, afford excellent crops. Such houses are indispensable in private gardens where Mushrooms have to be cut daily, and especially where vegetables for salad and cooking have to be blanched for daily use; but if that method of Mushroom culture were viewed commercially, the cost of the buildings, heating appliances, and fuel, would have to be debited against the value of the produce; and we suspect that nine out of ten inexperienced persons would lose far more than they would gain by adopting that method. Broadly speaking, it may be said that, if a person cannot grow Mushrooms profitably on the outdoor-ridge system, he cannot grow them profitably in any other way; but if he has fairly good results from that plan, he may expect somewhat better returns from a similar practice in sheds, though the beds must be large enough to generate heat there, and be covered for retaining it. The idea of running a flue under each ridge for imparting the requisite heat to the smallest possible bulk of material, is wholly fanciful; the heat must be the result of fermentation in which moisture is an essential, whereas artificial heat would dry the beds and render them quite unsuitable for their purpose. If you wish

to grow Mushrooms profitably, you had better follow the methods of persons who have had the greatest success in their culture, and they do not incur the expense of building sheds for saving manure, but spend the money the sheds would cost in the purchase of the requisite quantity of manure, and if they could not obtain this they could not grow Mushrooms. In the railway tunnel at Edinburgh flat beds have been tried, but abandoned in favour of the ridges. If you wish to discover new methods of producing Mushrooms, by all means make experiments, but be prepared to lose some money in the enterprise. If you desire to grow a few for your own use with the least quantity of manure, do like some others, press the best you can obtain in boxes a foot deep and place them in a cellar or room in which the temperature does not long remain below 50°. If you want to know anything more write again, and you may perhaps elicit information that will be useful to others as well as yourself.

Propagating Conifers (W. R.).—At no period of the year is the propagation both of hardy flowering shrubs and Conifers carried on in nurseries with greater rapidity than from the end of August onwards. The majority of Conifers are propagated by means of cuttings and grafting, many Pines excepted, and a few common varieties of Cupressus, which are readily raised from seed. The system adopted where the work is carried out on a large scale entails much labour. Narrow beds are formed about 2 feet wide, with a row of bricks placed edgewise on each side of the bed, leaving the tops of the bricks just above the soil. Handlights or small glazed boxes about the same width, and about 3 feet 6 inches in length, are in readiness before the cuttings are inserted. A heap of coarse river or red sand is placed at hand, and a good proportion is mixed in the soil, the surface being covered about half an inch in depth, after which it is ready for the cuttings. These, when the wood is fairly ripened, are frequently taken from the plants intended for sale, and others from stock plants kept in borders for the purpose. Some care is necessary in taking them so that the plants be not disfigured. The portions intended for cuttings should be so taken that when dressed each will have a heel. It is necessary that the cut be cleanly done with a sharp knife. The cuttings should be made clean for about an inch of the stem near the base, and should be from 2 to 4 inches in length, but the length matters little provided a good heel is left and the wood is in a proper state of ripeness. This mode of making the cuttings applies with equal force to all the Cupressus, Thuia, Retinosporas, and many others, but such kinds as Cryptomeria elegans, Retinospora ericoides, and others equally free strike readily without a heel. The cuttings are inserted as thickly as possible under the handlights on the prepared border, making the soil firm around them. A good watering is then given and the handlights placed over them. These miniature frames are generally arranged in rows, leaving about 2 inches between each bed to allow room for the frames to be removed as occasion may require. Little trouble is necessary afterwards, only giving shade if the sun proves very hot for a time after the cuttings are inserted. It is scarcely necessary to again lift the lights before the early spring, as the cuttings seldom need water before then. Sufficient will soak in round the handlights during wet weather, and keep the soil moist during the winter. The cuttings should be kept as close as possible until they are well callused, which will be the case in spring, as if air is given in their early stages many of the cuttings may damp off. During winter the only attention that is needed is to cover the frames with mats or other protecting material in severe weather. It is better if they can be so covered as to exclude all frost, but this is not absolutely necessary. I have seen the soil frozen hard for a long time and little or no injury has resulted therefrom. Another course of propagation can be effected by placing the cuttings in pots in the Conifer house, which is generally kept at a temperature of 40° to 45° during the winter. This system is practised to a large extent because smaller cuttings can be employed, which is often convenient with new and choice varieties.

COVENT GARDEN MARKET.—DECEMBER 4TH.

OUR Market is now very quiet, home-grown produce coming very light. Apples chiefly supplied from Nova Scotia and Canada, samples ruling inferior. Grapes in good supply with prices low.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 6	0	Granges, per 100	4 0 to 9 0
„ Nova Scotia and				Peaches, dozen	0 0 0 0
Canada, per barrel	12	0	20 0	Plums, $\frac{1}{2}$ sieve	0 0 0 0
Cherries, $\frac{1}{2}$ sieve	0	0	0 0	Red Currants, per $\frac{1}{2}$ -sieve	0 0 0 0
Grapes, per lb.	1	0	3 0	Black „ „	0 0 0 0
Lemons, case	10	0	15 0	St. Michael Pines, each	2 0 6 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artishokes, dozen ..	4	0	to	5	0	Leeks, bunch	0	2	to	0	0
Asparagus, bundles ..	0	0	0	0	0	Lettuce, dozen	0	9	1	3	
Beans, Kidney, per lb. ..	0	6	1	0	0	Mushrooms, punnet ..	1	6	2	0	
Beet, Red, dozen ..	1	0	2	0	0	Mustard & Cress, punnet	0	2	0	0	
Broccoli, bundle ..	0	0	0	0	0	Onions, bushel	3	0	4	0	
Brussels Sprouts, $\frac{1}{2}$ sieve	1	6	2	0	0	Parsley, dozen bunches	2	0	3	0	
Cabbage, dozen ..	1	6	0	0	0	Parsnips, dozen	1	0	0	0	
Cappicums, per 100 ..	0	0	0	0	0	Potatoes, per cwt. ..	3	0	4	0	
Carrots, bunch ..	0	4	0	0	0	Rhubarb, bundle	0	2	0	0	
Caniflowers, dozen ..	2	0	4	0	0	Salsify, bundle	1	0	1	6	
Celery, bundle ..	1	0	1	3	0	Scorzonera, bundle ..	1	6	0	0	
Coleworts, doz. bunches	2	0	4	0	0	Shallots, per lb.	0	3	0	6	
Cucumbers, each ..	0	3	0	6	0	Spinach, bushel	1	0	2	0	
Endive, dozen ..	1	0	0	0	0	Tomatoes, per lb. ..	0	6	0	9	
Herbs, bunch ..	0	2	0	0	0	Turnips, bunch	0	4	0	0	

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 18 blooms ..	3	0 to 6	0	Mignonette, 12 bunches	2 0 to 4 0
Asters, per bunch, French	0	0	0	" Fr., large bunch	1 6 to 2 0
Azaleas, dozen sprays ..	0	9	1 6	Myosotis or Forget-me-nots	
Bouvardias, bunch ..	0	6	1 0	doz. bunches	1 6 3 0
Camellias, dozen blooms	1	6	4 0	Narcissus (Paper-white),	
Chrysanthemums, 12 blooms	1	0	2 0	dozen sprays	1 0 1 6
Christmas Roses, 12 blms.	1	0	2 0	" French, 12 bunches	4 0 6 0
Chrysanthemums, dozen				Pelargoniums, 12 trusses	1 0 1 6
blooms ..	0	6	3 0	" scarlet, 12 bunches	4 0 8 0
Chrysanthemums, dozen				Primula (double) 12 sprays	1 0 1 6
bunches ..	3	0	9 0	" (single) 12 sprays	0 9 1 0
Epiphyllums, doz. blooms	0	6	0 9	Roses (indoor), dozen ..	0 6 1 6
Encubias, dozen ..	3	0	5 0	" Bed, dozen bunches	12 0 18 0
Gardenias, 12 blooms ..	4	0	8 0	" 12 blooms ..	1 6 2 0
Gladiolus (various) dozen				" Tea, white, dozen ..	1 0 3 0
sprays ..	0	0	0 0	" Yellow ..	2 0 4 0
Hyacinths (Roman) dozen				" French, per bunch ..	2 0 3 6
sprays ..	0	6	1 6	Spiraea, dozen bunches ..	0 0 0 0
Lupageria, 12 blooms ..	1	0	2 6	Stephanotis, doz. sprays	4 0 6 0
Lilium, various, 12 blms	2	0	4 0	Sweet Peas, doz. bunches	0 0 0 0
Lilium longiflorum, 12				Tuberose, 12 blooms ..	0 6 1 0
blooms ..	3	0	6 0	Violets, dozen bunches ..	1 0 2 0
Maidenhair Fern, doz.				" French, per bunch	1 3 2 0
bunches ..	4	0	9 0	" Parme, per bunch	3 0 4 0
Marguerites, 12 bunches	2	0	6 0	White Lilac, Fr., per bunch	6 0 8 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to 12	0	Ficus elastica, each ..	1	6	to 7	0
Arum Lilies, per dozen ..	9	0	12	0	Foliage plants, var., each	2	0	10	0
Arborvitae (golden) dozen	6	0	24	0	Hyacinths (Roman) 12 pots	9	0	15	0
Azalea, various, p r doz.	30	0	42	0	Geraniums, Ivy, doz. ..	0	0	0	0
Begonias, various, per doz	4	0	12	0	Lobelias, per dozen ..	0	0	0	0
Balsams, per dozen ..	0	0	0	0	Marguerite Daisy, dozen	6	0	12	0
Caladiums, per doz. ..	0	0	0	0	Mignonette, per dozen ..	0	0	0	0
Christmas Rose ..	0	0	0	0	Musk, per dozen ..	0	0	0	0
Chrysanthemums, dozen	6	0	15	0	Myrtles, dozen ..	6	0	12	0
Dracana terminalis, doz.	24	0	42	0	Palms, in var., each ..	2	6	21	0
Dracena viridis, doz. ..	12	0	24	0	Pelargoniums, scarlet, 12	0	0	0	0
Epiphyllum, per doz. ..	12	0	24	0	Primula (single) per doz.	4	0	6	0
Erica, various, dozen ..	12	0	18	0	Rhodantha, per dozen ..	0	0	0	0
Eucynus, var., dozen ..	6	0	18	0	Saxafraga pyramidalis,				
Evergreens, in var., dozen	6	0	24	0	per dozen ..	0	0	0	0
Ferns, in variety, dozen	4	0	18	0	Solanums, per dozen ..	6	0	12	0



PORK AND BACON.

Now is the time when we begin pig killing for home consumption, and the addition of choice home-fed pork to the household dietary is a welcome one, both as sausages and in joints; but pickled pork does not hold the prominent place at table that it used to do, yet it is undoubtedly both wholesome and palatable. Time was in our recollection when two or three huge tubs of pickled pork were always part of our winter supply from the home farm, but taste changes, and pickling tubs for such a purpose are very much a thing of the past.

Well cured bacon and hams are and always will be in constant request, and the home farmer has now to gradually make an ample provision of both for the next twelve months. In view of this care was taken as the store pigs were withdrawn from the stubbles after harvest to select enough of them with large long bodies to fatten gradually for this particular purpose, the more forward ones being pushed on quickly, to be followed by others as fast as the curing can be done, the number to be cured at a time being entirely a matter of convenience, and the total number according to the supply required. The farm produce book should always enable one to see at a glance the probable number of hams, sides of bacon, and chaps that will be wanted; but we always take good care to have a safe surplus for emergencies, such as extra company or a change of cooks, the latter especially often making a material difference in the quantity used, some chefs being very big men indeed, whom it is unwise to offend, as they have it in their power to make matters very unpleasant at the home farm, so that provided they keep within reasonable bounds it always answers best to meet their requirements with promptitude and cheerfulness.

Hams of about 20 lbs. weight are a favourite size, and we have pickling pans large enough to contain two of these on end side by side—not laid upon each other—in the pickle, where they are turned daily for a month. The pickle for each pair of hams con-

sists of 2 lbs. of salt, 3 ozs. saltpetre, 3 ozs. bay salt, 3 ozs. shallots (bruised), 1 oz. coriander seed, 1 oz. juniper berries, 4 lbs. treacle, $\frac{1}{2}$ lb. beef suet, with enough water to quite cover the hams. The ingredients are well stirred into the water, and when the daily turning is done the hams are rubbed with those parts of the pickle which do not dissolve. We are particular about details here, as we have often found beginners very stupid as to the precise manner in which the pickling is to be done, and have repeatedly found the mixture used without water, the hams being rubbed with it daily; but as there was no liquid pickle the curing was imperfect and the result unsatisfactory.

At the end of the month the hams are taken out of the pickle, put into separate bags (either of paper, or preferably of thin sack-ing), and suspended in the smoking room or chimney for about another month. Some prefer to smoke them longer, but a month is sufficient for all practical purposes. They are then taken out of the bags and suspended from hooks in the store or bacon room, and are ready for use then or any time for the next twelve months. The flavour of hams so cured is peculiar and delicious, being liked by the most refined palates, all that is wanted to crown our work with success being the final operation of cooking. It might be thought that to cook a ham is a very simple matter; so it is with ordinary care, but we have known many a well-cured ham spoilt in the cooking, simply because it was left to an ignorant kitchen girl. In one instance the ham was sent to table half raw, the glib-tongued excuse being that it was badly pickled; in another it was so much overdone that the fat was quite white, and it was only when we had another ham of the same batch brought from the farm and cooked in our own kitchen that we could convince the careless cook's master that his highly paid servant was to blame.

Our bacon is cured in sides off which the hams only have been taken. The pickle is made with salt in the same proportion as for hams, with the addition of 4 ozs. each of saltpetre and soda to each 40 lbs. of pork; the saltpetre imparts colour, and the soda prevents the lean part from becoming hard. For very mild-cured bacon there must be less salt used, but we do not think it wise to attempt this at the home farm where bacon has often to be kept so long. Bacon of excellent quality can easily be had by keeping it covered with the pickle and smoking it as was explained for hams. In the large chimneys of an old farm house the smoking can be done perfectly, provided non-resinous wood only is used, such as Oak or Beech logs, but without such chimneys there must be a separate building for the smoking.

WORK ON THE HOME FARM.

A test of good management of poultry is a regular supply of eggs now, which is only to be had where enough pullets were saved from March, April, and May broods. Of a considerable number of poultry which have lately come into our hands only one hen lays, and anything like profit is out of the question till next spring. Now this ought not to be, yet in a matter so simple and so clear it is quite exceptional to meet with a full supply of eggs in winter. We call attention to the fault once more, in order that unwilling or unintentional defaulters may resolve to set matters right next season. Another fault which we must set right are the badly arranged perches of one of our fowl houses. The fowls can get up well enough at night, but in the morning many of them cannot fly down without knocking themselves about. We proved long ago that very low perches afford no real remedy for this. If it is possible to reach a high perch of any sort up they will go, as Nature prompts them, and the only plan is so to arrange the perches that all the fowls can come down easily from them. With legs of mutton at 10 $\frac{1}{2}$ d. per lb., poultry of all kinds should have a brisk and profitable sale. Turkeys are now fast being finished for Christmas markets, and as they are sold by weight high feeding answers better with them than for other poultry sold by the carcass. Some of the best young ones will be selected for stock birds for next season, as it hardly ever answers to keep over old birds. A well fattened gobbler weighing from 20 to 25 lbs. makes a noble appearance for the supper table of a Christmas party, but a regular weekly supply, plump if small hens, are liked best.

Where there have been losses from gapes and a totally new run cannot be had, the surface should either be turned over or fresh earth, ashes, or gravel laid down during winter sufficiently thick to prevent further risk of contagion. A badly built fowl house is being made warm and snug by having the interior lined with match-boarding. This is a somewhat expensive but thorough remedy, which is the best thing to do under the circumstances. We have seen an excellent and

very durable poultry house with sides and roof entirely covered with corrugated iron sheets fastened to a wooden frame.

OUR LETTER BOX.

Agricultural Chemistry (W. G.).—There is an excellent series of papers on agricultural chemistry in "Cassell's Popular Educator," which work we highly commend to all young men striving to improve their education. Of books get "Chemistry of the Farm," by R. Warington; "Life on the Farm—Plant Life," by Maxwell T. Masters, published at 2s. 6d. each by Bradbury, Agnew & Co.; "Science Primer—Chemistry," by Professor Sir H. Roscoe, 1s., published by Macmillan; "Lectures at King's College," by F. J. Lloyd; or "Agriculture," 12s., published by Longmans; "Agricultural Chemistry and Geology," 6s. 6d., by Professor Johnston, published by Blackwood; "First Year of Scientific Knowledge," by M. Paul Bert, 2s. 6d., published by Relfe Brothers, Charterhouse. You will also find useful "Students' Chemistry," by A. J. Bernays, published by W. H. Allen & Co., 13, Waterloo Place, Pall Mall. We cannot give you the price of this, as ours was a presentation copy. The third part of Stephens' "Book of the Farm," 10s. 6d., contains much valuable information on the subject, and when you become familiar with the rudiments you will find the English edition of Ville's "Artificial Manures," 21s., published by Longmans, will repay you for close study. Try also to see the periodical reports of the various associations for the promotion of scientific agriculture as they appear.

Maize—Improving Pasture (E. R., Lancashire).—The advice given you to dibble Maize in your pasture in view of obtaining "a heavy crop of something sweet and juicy," is simply absurd. It is true that Maize will yield a heavy crop—as much as 30 tons per acre of valuable green food either for use in summer or as chaffed silage for winter use—but it requires soil that is well tilled and highly manured, as well as from three to four months of warm genial weather for its development. It is so sensitive to frost that it is not sown till June in the southern counties, so that it is not fully in use till about the third week in September. This explanation will enable you to decide if your climate is suitable for it. Now for the soil. You say it is shallow with a subsoil of clay. Maize revels in a deep rich soil, but it answers well enough in a light soil heavily manured, and you might try a patch, but remember there must be no dibbling in pasture, but thorough cultivation with plenty of your stable manure, and any of the Maize sold in shops will answer. But why not try and enrich your poor pasture? A heavy dressing of old stable manure applied at once would much improve it for next season, and a regular annual dressing would ensure sustained fertility. If, however, the herbage of the pasture consists of poor indigenous grasses, then we should break up the pasture, work plenty of manure into the soil, and sow it as early next spring as the weather will allow, with mixed Grasses and Clovers for a four-years layer—a temporary pasture, in point of fact—with the mixture offered by any of the great specialists advertising in this paper. Such pasture would yield heavy crops of rich succulent herbage, altogether superior to that which you probably now have. But pray remember it must have a heavy annual surface dressing of manure after the first season, if of stable manure in the autumn, if of chemical manure early in spring. Should you decide to retain most of the permanent pasture intact you would find a few perches broken up and sown with Lucerne in rows wide enough apart for hoeing between would afford you a valuable successional supply of green food for your pony throughout summer.

ROOTS AND GRAIN AT BIRMINGHAM.—Messrs. Edward Webb and Sons, in directing our attention to their stand of roots and grain at the Birmingham Cattle Show, send us a list of prizes that have been awarded for their specialities, the very length of which precludes its publication. Twenty-nine first prizes at one show ought to satisfy the most enterprising.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1889. November.		Baromet- er at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday		24	29.890	50.7	50.0	S.E.	41.2	52.9	46.3	81.9	39.8	0.378
Monday		25	29.507	42.6	40.4	N.W.	46.9	47.4	41.9	79.9	88.7	
Tuesday		26	29.727	34.1	33.3	W.	44.3	44.8	31.4	69.7	27.1	0.035
Wednesday		27	29.681	31.9	30.2	N.	42.1	35.4	28.2	42.9	24.4	0.010
Thursday		28	30.191	29.9	28.1	N.W.	40.8	37.3	27.8	61.7	21.8	
Friday		29	30.238	32.8	31.8	W.	39.2	40.2	29.1	48.9	24.8	
Saturday		30	30.121	37.8	37.1	N.E.	38.9	42.0	32.5	46.3	34.9	
			29.908	37.1	35.8		42.6	42.9	33.9	58.8	30.6	0.423

REMARKS.

- 24th.—Occasional showers, but fine with a little sun for an hour or two at midday.
 25th.—Brilliant throughout.
 26th.—Bright morning; heavy shower with a little wet snow or sleet from 1.45 to 2 P.M., and bright again after.
 27th.—Fine, cold and frequently bright morning; slight snow showers whitening the ground in the afternoon.
 28th.—Bright and cold throughout.
 29th.—Fine, with sunshine at midday.
 30th.—Dull and slightly foggy till 1 P.M., then clear but cold.
 Sharp fall of temperature from the previous week, the present one being below the average.—G. J. SYMONS.



FERNS.

FERNS have much natural beauty to recommend them, for with a prevailing grace of form we have a surprising range of variation in frond outline, composition, and habit. Flowerless themselves, they constitute admirable foils to the rich colours and showy or delicate flowers of other plants. In this way they are invaluable for decorative purposes, but alone they possess sufficient beauty to command a place in gardens, and those who have taken up their culture as specialties have soon become as enthusiastic as orchidists and others who have made studies of particular plant families. Nor are the attractions of Ferns confined to exotic species, for the almost innumerable varieties of British Ferns present some charming frond developments, many in delicacy and intricacy of detail equalling or even surpassing the best introductions from other countries.

To form an idea of the marvellous extent of variation in Ferns it is only necessary to glance through the great collection at Kew, noting the stately tree-like *Cyatheas* and *Dicksonias*, which rear their imposing crowns of fronds far above all their relatives; the graceful *Adiantums*, the powdered Gold and Silver *Gymnogrammas*, the luxuriant and elegant *Davallias*, the exquisitely beautiful *Cheilanthes* and *Nothochlænas* with fronded tracery, the distinct climbing *Lygodiums* forming long wreaths and festoons of twining fronds, the bold *Aspleniums*, the rugged *Marattias* and *Angiopteris*, the creeping *Polypodiums*, and lastly those gems of the Fern world, the "Filmies," *Trichomanes*, *Hymenophyllums*, and *Todeas*, the translucent fronds of which appear in some cases frosted with crystals or glittering with liquid diamonds. There are only a few of the types that take the attention of a passing visitor to our national collection, but to those who possess a more intimate knowledge of the hundreds of species now cultivated in British gardens there are abundant other attractions of scarcely less importance; in fact nearly every individual Fern is invested with sufficient character to render it an interesting study to all who care to devote a little time to its careful examination.

Many amateurs have made specialties of some genera, or even of the varieties of certain prolific species, but this has chiefly been done with British Ferns and the "Filmies." Collections of the former are frequent, particularly in the north of England and around such towns as Sheffield. Wonderful collections have been formed by the late Mr. Carbonell and Mr. Lowe near Uske in Monmouthshire, by the late Colonel Jones near Bristol, and others; while of smaller collections there are hundreds of considerable interest, to some of which we shall have occasion to refer in the course of these notes.

The decision of the Royal Horticultural Society's Council to hold a Fern Exhibition and Conference in 1890 was a wise one, for there is no doubt that from a public exhibition point of view Ferns have been comparatively neglected. Their history, structure, and culture, too, afford abundant materials for discussion at a conference, which can easily be rendered of an exceedingly interesting and important character. It is true that some societies have provided classes for specimen Ferns at the larger exhibitions, the northern societies in particular also giving encouragement to hardy Ferns, but beyond that little has been done. Two important exceptions must, however, be noticed—namely, at Brighton and Bath, where attempts have been earnestly made to do justice to

this large and beautiful family of plants. At Brighton classes have been devoted to groups of Ferns arranged for effect, and the results have been satisfactory in the extreme, instructive as showing what can be accomplished with Ferns alone, and affording a refreshing contrast with the bright masses of colour furnished by *Pelargoniums* and other flowering plants. Compared with the conventional groups at shows these are far superior when tastefully designed, not crowded, but allowing every distinct character of frondage and habit to be distinctly seen. Much, of course, depends upon the individual taste of the competitor and the Ferns at command, but diversity of style often compensates for a restricted collection of varieties, the banking method being avoided in all cases. The Bath Society at one of their summer shows a year or two since had a large tent exclusively occupied with Ferns, British varieties largely predominating, and the late celebrated pteridologist, Col. Jones, was one of the chief exhibitors with others in the district, and Messrs. W. & J. Birkenhead from the north. In a large experience of shows throughout this country I have never seen a more interesting or pleasing tent of plants, and it was quite refreshing to turn from the gay floral display in other portions of the grounds to the coolness and varied shades of green in the Fern tent. These are only examples of what can be effected in exhibition of Ferns, and working upon some such lines as these the Royal Horticultural Society will have little difficulty in producing something quite worthy of their efforts.

With regard to the commercial value of Ferns for decorative purposes it might be safely stated that, though as collections representing the family, Ferns are neglected in private gardens, yet never in the history of horticulture have they been so extensively employed for house adornment and in floral arrangements as at the present time. It would be difficult to estimate the number of Ferns sent into the markets in the course of a year, and impossible to give even a vague idea of the quantity of cut fronds of *Adiantums* and other Ferns either sent from growers in this country or imported from the continent. Suffice it that some "market men" devote themselves almost exclusively to Ferns, and there are several large growers around the metropolis who derive a substantial income from the sale of these plants alone. Wherever cut flowers are a special feature in market nurseries Ferns are grown extensively as well, and a consignment of flowers for sale would be deemed incomplete without its accompanying proportion of Fern fronds. The extension of the cut flower business has induced a corresponding increase in the demand for suitable foliage, and the result has been that a great stimulus has been given to the culture of Ferns. Of course, few species are grown for this purpose, *Adiantum cuneatum* and its variety *gracillimum* largely predominating; but amongst the importations we have several others, and it might in some cases be worth the attention of market growers whether they could not add to their stock of varieties.

In the general nursery trade nearly every firm of any importance has a department for these plants, but few have made specialties of Ferns in the same way as Messrs. J. Veitch & Sons of Chelsea, Messrs. B. S. Williams & Son of Upper Holloway, and Messrs. W. & J. Birkenhead of Sale near Manchester. For many years these firms have steadily increased their collections, adding to them all the best of the novelties obtainable, either amongst new introductions or home-raised plants, and now together they comprise nearly all the Ferns in cultivation in this country.

As a collection, however, that in the Royal Gardens, Kew, is unrivalled, and as the history of its advance is to some extent the index of Fern progress in Great Britain, we may appropriately glance at the record thus afforded us.

The first edition of Aiton's "*Hortus Kewensis*" was published in 1789, and in it were included sixty-seven species of Ferns, a small proportion of which were exotics, chiefly from North America or the West Indies, comprising *Onoclea sensibilis*, *Osmunda regalis* and *cinnamomea*, *Pteris longifolia* and *arguta*; several

Aspleniums, *Dicksonia arborescens*, and *Adiantums reniforme*, *pedatum*, *villosum*, and *fragrans*. That fairly represents the number of Ferns in cultivation one hundred years ago, a remarkable contrast with the present knowledge of these plants. The second edition of the same work was published in 1813 and 1814, when the number had increased to 120, thirty-seven being natives of Great Britain. Whether all these were represented by living plants in the collection is doubtful; at any rate, Mr. J. Smith has told us that when he entered the Gardens at Kew in 1822 he found only forty tender exotic species in the various houses. Three years later the tropical Ferns were arranged together in one house, occupying a space of 6 feet by 12 feet, forming the commencement of the present large collection. Mr. Smith applied himself closely to the increasing of the numbers of cultivated Ferns during the next twenty years, with what success can be judged from the fact that he published a list in an appendix to the "Botanical Magazine" for 1846 including nearly 400 species. A catalogue issued ten years later—namely, in 1856—gives 504 species, and this number was still farther increased in 1868 to 802 Ferns and 48 Lycopods. In 1882 the total remained practically the same, as, while many new species had been added, others had been either excluded or lost. Since then there has been a great advance, for a list prepared during the present year, and which will shortly appear as a special issue of the "Kew Bulletin," the total number of Ferns is 1261, of Lycopods 108. This, too, does not include the varieties of *Scolopendrium*, *Asplenium Filix-fœmina*, *A. aculeatum*, *Nephrodium Filix-mas*, *Polypodium vulgare*, and other British species, the number of which has been so greatly increased by the collection bequeathed to Kew by the late Mr. Carbonell. About 4000 plants were thus obtained, comprising probably 2000 varieties. The Cooper Forster Filmy Ferns have also enriched the collection greatly, and, with some much-needed alterations in the structures devoted to the plants, and an excellent system of management, the condition of the plants has been wonderfully improved. It now constitutes one of the best departments in the whole establishment.—LEWIS CASTLE.

(To be continued.)

TOMATOES IN 1889.

TOMATOES have proved an abundant crop this year both indoors and outside in favoured positions on walls. They have not, however, been grown without considerable anxiety on the part of some cultivators, for disease in some gardens has been very troublesome. The remedial measures taken, although probably having a deterrent effect on its progress, were not effective. Nothing that I have heard of has yet proved fatal to its growth when once the plants are attacked. Plants growing outdoors do not appear to contract the disease as do those produced under warmer conditions under glass; but although cooler and more airy conditions are less favourable to the spread of disease, they are more liable to that which infests the Potato during the late summer and autumn months, when it becomes prevalent among these crops. Undoubtedly the spores are carried by the wind in all directions, as last autumn the first sign of this pest was observed on a Tomato plant growing directly under a ventilator of our Peach house, in which we grew the greater portion of the crop, and once established within it very soon wrought havoc among the remainder of the plants. So severe was the attack that in a very short space of time it became necessary to cut all fruits and clear out the plants. Fortunately, however, we had not been troubled with any this season indoors or out, but we have had our share of that more greatly dreaded *cladysporium* or Tomato disease. Its first appearance was noticed on a plant of Hackwood Park, obtained among others by a friend in Hampshire, who, strange to say, has not had a trace of it among his crops this year. Whether the disease is perpetuated in the seeds I have not had experience to prove, and I am not likely to run the risk in saving any from our own stock. In an adjoining house it made a much later appearance, although the side ventilators opened from one into the other, and there again the Hackwood Park variety was the first attacked. Directly it was observed every apparently affected leaf was promptly removed, and the remainder, together with the stems, were given a good

dressing of sulphur, but unfortunately it did not have the desired effect.

In growing a number of varieties there is much to interest one in comparing their respective merits, especially when planted in a continuous line, where they come within easy view. When grown for home use merely the fewer sorts in such cases the better. For high qualities, combined with free cropping, none that I have seen this year can excel the Orangefield. I saw a large houseful of a good selection of this variety in spring bearing a crop such as I have never seen equalled, and only one, or the most two other sorts, were grown for trial; but I imagine they will not find space another year in that garden, excellent varieties though they were for exhibition purposes.

With us, although numbers of sorts are grown, Reading Perfection still holds its own, and several more under other names bore very close resemblance to it. Our next in point of favour is Daniels' Crimson Queen, a beautifully shaped dark-coloured fruit, and bearing a heavy crop, both in pots and outdoors. Gilbert's Surpasse is a distinct medium-sized fruit and a free cropper. Mikado and Carters' Dedham Favourite are not appreciated on account of their colour—a cornelian red; but the newly selected form of Mikado is a splendid variety of a dark crimson colour, and very distinct. For winter and early spring cutting a good selection of Large Red and Suttons' Earliest of All are indispensable. Among the yellow or golden-skinned varieties Golden Eagle is a great favourite with those who use them as dessert, the flavour being exceptionally good, and is very productive. Large Yellow gives larger fruits, but are much paler in colour, and the flavour insipid compared with Golden Eagle.

Some good fruits have been gathered from open walls; the heaviest we have cut weighed 14 ozs. They may have been secured of larger size by thinning, but preference was given to quality rather than fewer sensational fruits, which are less useful. The last of our crop were gathered outdoors on October 18th. These were placed on shelves in the greenhouse to ripen gradually, and will continue the supply for some time hence. Altogether the year 1889 has been generally favourable for Tomatoes, and outdoors in particular, but it will be long ere it will be forgotten, and its association with diseases, which in some districts have followed them with such persistency. It is to be hoped that we shall not be favoured with a repetition another year; but such hopes, it is feared, will not be realised, as there is danger of spores being retained sufficient for further impregnation.—W. S., Frome.

LILY OF THE VALLEY.

ALTHOUGH forestalled to some extent in some notes on the above subject that I had in hand, by those of your correspondent Mr. Frampton (page 208), yet a few remarks on the comparative methods of culture may be of interest. In deference to an expressed desire to be favoured with blooms of this favourite plant during the early winter months and onwards, a special effort was made to obtain them, but as most of those who have attempted to force this plant into growth before the turn of the year will readily testify, this proceeding is not always such as results in much satisfaction. With us fortunately, in the establishment where I was at that time engaged, the financial point of view was not of primary importance, or the attempt would soon have been discarded as hopeless, for crowns of the finest quality were at our disposal, and so far as our knowledge of the proper treatment went, they received the best of attention, yet our labour brought but small returns. A few spikes rose here and there from the various supplies introduced into the forcing house (potted in a similar way as mentioned by Mr. Frampton) as soon as it was possible to obtain crowns, but not until the early spring months was the simultaneous starting into growth of a whole batch expected, and so regular had this become, that the number of crowns, technically known as "gibbers," placed on to the rubbish heap, would have astounded a regular market grower had he purchased a similar lot and obtained such small returns.

Since that time I have passed through establishments where the most had to be made of the means at disposal; and in this case, as in some others, I have observed results far superior to where cash supplements skill in the production of successful results; and it came as rather a reverse to find that we were expected to grow our Lily of the Valley outright, instead of purchasing it already half grown. But as the system has been in vogue apparently for some time, I watched the operation closely, and so convinced was I, that I have since paid more attention to the home-cultured roots than I had previously considered profitable. With imported roots we considered it fairly good to obtain 75 per cent. of spikes a fortnight before Christmas, whereas with improved treatment and

home-grown roots we have had spikes by the second week in November and from December onwards.

The stock from which we are now obtaining our crowns for present forcing was secured from a few square yards dug up some four years since in a corner of the kitchen garden, where it had, judging from the closely woven mass of roots and number of tightly packed crowns, been undisturbed for a number of years. All the best flowering buds were selected which, when introduced into heat during January, promptly produced strong spikes of bloom with fine healthy foliage, while imported roots under similar treatment were almost destitute of leaves. A second selection was reserved for planting with the object of producing crowns for the following year's work; these, placed on a south border in a rich soil in rows 6 inches apart, and some 2 inches clear of each other, made strong plump flowering buds by the autumn. The remainder of the heap of roots was distributed in an open quarter of the garden in a somewhat similar manner, plenty of good rich manure being worked in as planting proceeded. Strong growth was the result, and an almost incredible stock of good flower crowns for forcing has now rewarded our efforts.

The first were dug up towards the middle of October last year, and after removing all lateral crowns that of course do not contain a flower bud, they were spread out behind a north wall with the object of inducing a premature rest; in this we were assisted by a sharp touch of frost, which so far from injuring them is, I am inclined to think, decidedly beneficial when they are wanted for extra early forcing. Of course care was taken to prevent them suffering from drought, as I am of opinion that this is sometimes the cause of their not starting into growth so readily as they should, a opinion that is also shared by a market grower of my acquaintance, who speaks of the consignments of a firm of home growers in the eastern counties that pack their roots in casks for travelling as being always reliable in starting promptly.

Unlike Mr. Frampton we do not consider turfy loam, leaf mould, and sand a necessary medium for placing the roots in, seeing that the existing roots remain persistently dormant, and not a single fresh feeder is emitted while being forced, a curious state of affairs that has probably escaped Mr. Frampton's observation. Cocoa-nut fibre refuse is our favourite substance, and it appears to be specially adapted for this purpose; heat-retaining without fermentation, antiseptic and moisture-holding, it constitutes a most useful article for many purposes in the forcing house.

The cavity over a hot water tank that is used for propagating is filled with about 6 inches of this material, and the crowns distributed below over the bed, and about an inch below the surface. The whole receives a thorough drenching of tepid water, and the heat is turned on until the plunging thermometer registers at least 95° or 100°. Under the combined influence of this amount of heat and moisture, other things being equal, the spikes soon commence to push through, when the heat can be slightly reduced. Should pot plants be required the forwardest roots can be withdrawn and placed in a uniform manner in suitable sized clean pots, using some of the cocoa fibre by preference. For earliest supplies a few growth crowns should be included, which will prove useful in making up pot plants, or a root of Solomon's Seal (*Polygonatum multiflorum*) can be placed in some convenient corner of the forcing house to supply leaves of almost similar likeness to the plant's own, when such are desired to be used for cut purposes. The association of the plant's own foliage with its flowers should be managed if possible, as in my estimation much of the charm of the beautiful plant is lost when presented in its usual early forced condition.

Not having, as yet, had the opportunity of testing the merits of the Berlin variety when grown at home, I cannot say as to its adaptation for early forcing, but for that purpose throughout the spring months it has no equal, the variety under present cultivation being the common Dutch; though smaller in spike and individual flowers, it is for general purposes of spray and button-hole bouquet-making none the less useful.

We have at present the second roots in flower, from which I send a few spikes for your inspection. The first was not this year quite so successful as usual; this we attribute to the unusually mild autumn and absence of autumn frost that is now considered almost necessary to prepare the crowns for early forcing. I should be interested to know why Mr. Frampton prefers a substantial loam for their cultivation, as I generally find that the finest imported crowns appear as if they had been growing in a very sandy soil, and on this presumption we have always endeavoured to make the quarter in which we have planted as light as possible. Moreover, I am of opinion that a light soil conduces to early ripening of the crowns, and the plants themselves with us certainly flourish better in these quarters than in others when the

soil is naturally of a most exceptionally substantial character.—M. COOMBE.

[The flowers in question, which were accompanied with leaves, were referred to on page 487 last week.]

IMPROVING FRUIT TREES.

MIDWINTER is not the best season to attempt the improvement of wayward fruit trees, but it is better to take them in hand even then than to allow them to go on producing poor crops of deformed and "scabby" fruits. The younger the tree the less difficult is it to bring it into a fruitful condition, and although very old fruit trees may be rejuvenated, there is doubtless a stage when the time for this is past. In the case of very old trees—referring here to Apples and Pears—the best plan is to cut over the head, and allow only a sufficient number of branches to grow as will form a good tree either in the open or on a wall. If good strong growths are made for a couple of seasons the roots may then be taken in hand; though the mere removal of worn out branches and the production of young ones may and often does bring the tree into a fruitful condition, but this will not be lasting. Therefore it is as well to cause the trees to produce a new set of roots.

If an Apple, and the main roots are numerous, one-half may be cut at 3 to 4 feet from the stem, and working underneath so as to cut all down-going roots. If the subsoil is bad it must be removed and good supplied, but where the soil is in fairly good condition it may be broken up and returned. Comparatively few gardeners have it in their power to add turf or loam, and where they can do so the time may be wanting. It is, therefore, well to know that good results follow from merely turning over the soil as above. If the roots are found to be few and large it may be safe to be content with the cutting to 3 feet from the stem of one such root, leaving the cutting of more till another season.

In the case of large Pear trees, especially those trained against walls, it is advisable to proceed with great caution; and it will be found better to cut 3 yards or so from the stem, and not going more than halfway round the one season. If these cut roots produce a good number of root-breaks the season following, and the foliage made be strong and healthy, then the succeeding year undertake the pruning of the other half; this time, however, cutting much closer to the stem, say from 4 to 6 feet. But everything must depend on the condition of particular trees. Plums, Apricots, and Peaches it is best to cut quite round, 10 to 12 feet from the stem, and if the shoots are thickly placed and weakly the least promising of these should be cut out. These remarks apply of course to large trees.

With regard to younger trees, say those of twenty years of age, which continue in an unfruitful condition, the mere cutting back of half the roots to 3 feet from the stem in the case of Apples, and to 6 feet in the case of Pears, may bring the tree into bearing. However, if canker is present, it may be as well to cut back the stem and not root-prune until after two or three years have elapsed, when both canker and unfruitfulness will disappear. The next year should see the root-pruning process completed. Some seasons it will be advisable not only to cut back the main roots previously left uncut, but also to cut a little further out from the stem round the first cut portion. This will hasten fruit-bearing very much. With regard to young trees I find it necessary to continue root-pruning. The trees may be left for a few seasons, but nothing is gained in any way, as the fruit deteriorates and the check is of course greater than when an annual or biennial cutting round takes place. If the shoots are kept fairly thinned there will be no gross wood made, but strong firm and freely studded with buds. Plums are especially liable to make a few very strong growths. I have seen these left alone, pinched, or broken clean off, or cut back; but neither of these—some good and some bad—practices is to be compared with attention to the roots, both as a check and as a hindrance to this habit.

It must be pointed out, however, that root-pruning in whatever form can never be perfectly successful unless other cultural points are at the same time remedied. For instance, pruning may be required to be modified. Some seasons the knife may hardly be needed at all, in others pruning may be a necessity. It is all a matter of judgment. Then an important matter too often neglected lies in allowing trees to carry too heavy crops. I find comparatively few people with whom I come in contact thin hardy fruits. Now it is good paying practice to do so, and in the case of old trees newly root-pruned which may set a crop of fruit, it is of the first importance that a very small crop should be left not to burden the tree. It may be said, however, that a heavy mulching of dung will carry the tree through. That I believe to be an absolute mistake. Dung as a fruit producer is a fallacy, and the

mere mulching of the ground will not have the desired effect. Bonemeal, lime, muriate of potash and superphosphate of lime are the kind of manures which produce fruit and fruitful trees of the highest excellence. Artificial manures based on these should have the preference to others when purchasing for this purpose.

But there will always remain a few trees which do not come up to others in healthiness, in fruitfulness, or in the good quality of the fruit. The simple remedy is to head over, regraft with good kinds, or else destroy. Trees may be root-pruned with safety up till January, but October is the better month, and in some cases August and September would be preferable.—B.

HARDY SHRUBS FOR FORCING.

VIBURNUM OPULUS.

WHERE forced flowers are required during the winter and spring, the Guelder Rose cannot well be dispensed with. Large plants lifted from shrubbery borders and potted in autumn, certainly yield quantities of flowers. But we have not found shrubs of this nature the most useful for yielding a succession over a lengthened period; in fact, large specimens are useless for any other purpose. This is not all, for unless large numbers are grown, the time comes when those in outside borders are unfit for forcing. After they are once dug up and forced, they need at least two years' rest before they are fit for forcing again. We strongly condemn robbing one part of the garden for the purpose of adorning another, when plants can be easily prepared that are more suitable, and can be used either for yielding cut flowers or for furnishing conservatories and other structures.

The most suitable plants for forcing are those in 5 to 7-inch pots, with three to six shoots 18 inches to 3 feet in length. When starting the culture of these plants for the first time, these anxious to have good specimens suitable for forcing next autumn should secure the requisite number of one-year-old plants at once—namely, those raised from cuttings inserted last autumn or winter. These on an average will have one strong shoot each and a quantity of roots. They should be placed into 5-inch pots; one good crock at the bottom will be ample, and the plants will do well in good loam and one-seventh of manure. The soil must be pressed firmly into the pots. We have invariably noticed that purchased plants never do quite so well as those raised at home. This is due mainly to the latter being lifted and potted while the foliage is fresh and green. With care in lifting, and attention in syringing afterwards, they make fresh roots and become partially established before winter. Purchased plants, even if bought while the foliage is upon them, are damaged in transit, and the leaves quickly turn yellow and fall. With care and good treatment purchased plants are useful the first season. If we had no old examples from which cuttings could be obtained we should purchase a double quantity of plants, potting the best and placing the remainder outside for lifting the following season.

After the plants are potted they can be plunged outside, covering the surface of the soil and rim of the pot with ashes. They may remain in this position until the approach of severe frost, when they can be pruned close back, leaving the eyes at the base of the young wood, and stood in cool frames. In spring plunge them in a sunny open position; if they can be covered with a frame for a time all the better. When once a stock of plants has been raised, cold frame treatment is unnecessary.

Two-year-old shrubs are better, as a rule, than those one year old; they generally produce a greater number of good shoots. When stock is raised at home, young plants or cuttings should be planted 15 inches apart between the rows, and 8 inches from plant to plant in the row. This gives them room to grow for two years without crowding. Any open sunny position will do for them; in fact, during the time they are being prepared previous to potting, almost any place will suit. For years we have been in the habit of placing them between rows of pyramid Apple trees. When they are left two years they need cutting close back during the winter after the first season's growth, and are lifted the following October, moderately early in the month—but this depends upon the season to a very large extent. When potted they are plunged where they are to be grown, in an open sunny position. The pots are placed sufficiently far apart so that they can grow the whole season without being crowded. It is important that light and air play freely amongst their shoots. This time the pots are buried during the process of plunging, the surface of the soil and rim of the pot being covered. The advantages of this method are not only the protection of the pots from frost, but labour is saved in watering. The plants may only need one or two soakings of water, unless the season proves an exceptionally dry one. In this case we have found it a good plan, after a thorough watering has been given,

to mulch with old manure or half-decayed leaves. Pruning is done any time during the winter or spring before signs of growth are visible.

Cuttings of ripened wood root freely enough if inserted any time after the end of October, but the earlier the better. The cuttings should be 6 or 7 inches in length, the top eyes being level with the ground after insertion. For some years we have practised rooting them in spring. Growing shoots are taken from plants that are forced and inserted in boxes of light soil, composed principally of leaf soil with a little sand on the surface. The cuttings are placed 2 inches apart, and if kept close and moist in the propagating frame they are not long rooting. They can afterwards be gradually hardened and allowed to grow in the boxes until autumn and then planted out singly.

After plants have flowered they should be cut close back and allowed to break into growth in a cool house or frame. If the pots are well filled with roots, which they are certain to be, whether one or two-year-old plants when they were first lifted, they should be shifted into 7-inch, and if encouraged under glass to grow for a time, they will be ready by autumn for forcing again. If they are hardened and placed outside as early as possible after flowering, very few of them will make strong well ripened shoots suitable for forcing, but they would do so the following season. When turned out after forcing they are severely checked, and one year's rest is necessary for them in which to recruit themselves. All the plants after forcing do not thrive equally well, and those that display signs of lagging behind are either planted out or thrown away, hence the necessity of raising a few annually to insure a healthy stock.

In some establishments a few examples in 10-inch pots may be found serviceable, and these may be prepared by placing them into this size after they have been forced and have started into growth in 7-inch. When they become crowded with roots in 10-inch pots, so much so that they refuse to make clean stout growth, they can be induced to do so by reducing their roots after forcing, and allowing them to grow without being cut back until autumn. If they are then pruned and treated the same as young stock outside, they will make strong growth again by the following autumn. It is much better to reduce their roots and give them fresh soil than to supply liquid manure. Only in exceptional cases would such a course be advised. As young stock is raised so easily and quickly, it is much better to pot on young plants than reduce the old ones and waste a season in recruiting them.—N. G.

(To be continued.)



CUTTING DOWN CHRYSANTHEMUMS, &C.

Now the Chrysanthemum season is over I should like the opinion of those who have tried the cutting down system, also the pinching system, or rather taking out the points to get the crown bud at the proper time for exhibition.

When I first adopted the cutting down system six years ago it proved a failure for exhibition blooms. The plants were certainly dwarfer and better for decoration or grouping, and for those purposes I would recommend it if carefully done. What I mean by carefully done is the plants should not be struck too early, or the wood would be hard and often wiry, and the plants should be well rooted in their pots, what would be just ready for potting, but they should not be root-bound; and, again, the soil should not be wet in the pots, but just moist, and care must also be taken not to cut them too low; there should be at least five or six good healthy leaves left below where they are cut off. I made mistakes in each of the above cases myself.

At one time I used to insert my cuttings in November. At that time the plants often throw good strong shoots, which are very tempting. But since I have left the propagation until the first week in January I have had more buds show naturally at the right time—that is to say, about the first week in September. Has the time of propagation anything to do with it? I think it has, but I will leave it for able persons to decide, if any will be kind enough to give their experience on the question.

When is the best time to cut down? In this district from the middle of May seems the most suitable time, commencing with the latest sorts and those which have filled their pots with roots, and all should, if possible, be completed by the end of June.

With regard to taking out the points of those which are not breaking naturally, I have tried some, commencing from June 20th until about July 14th, and the later date was too late.—J. L. B., *Leicester*.

WREATHS AND STANDS OF CHRYSANTHEMUMS.

THE accompanying illustration, sketched by our artist at the recent Exhibition of floral decorations in St. Stephen's Hall, Westminster,

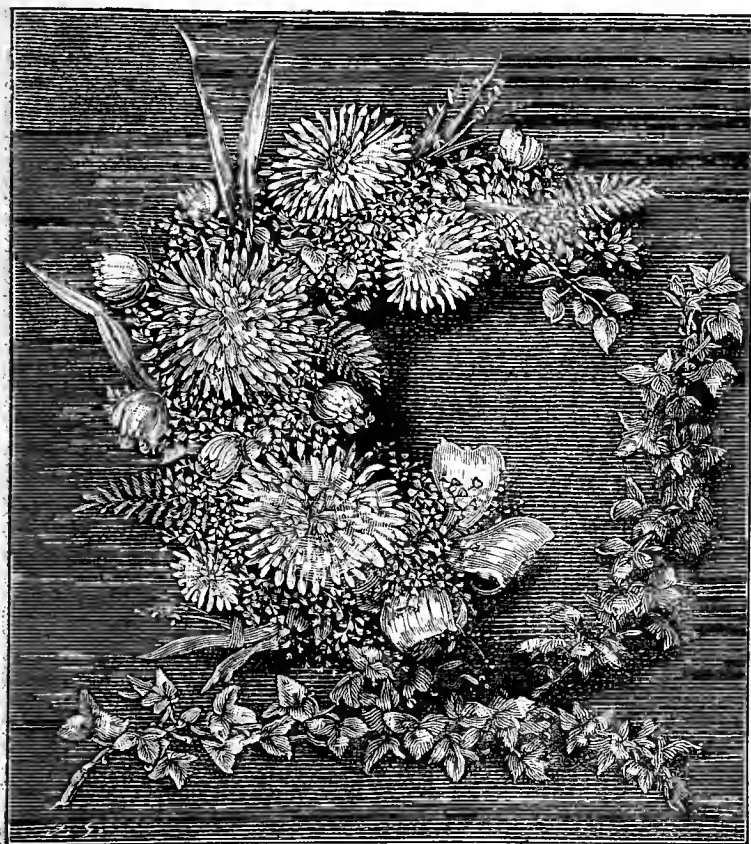


FIG. 63.—A WREATH OF CHRYSANTHEMUMS.

affords some idea of what can be effected by a tasteful disposal of *Chrysanthemum* flowers with Grasses and appropriate foliage. Japanese varieties, orange or red, look well alone or in combination with white varieties for this work, especially under artificial light.

USEFUL CHRYSANTHEMUMS.

THESE, it must be noted, are for decoration and cut flower purposes. Some of them, doubtless, have been recommended in times past, but as there are always new readers, as well as some with new wants, I have no doubt they may be of use. I think the best of all is *Elsie*, a straw coloured reflexed Japanese variety, the only fault of which being its somewhat tall habit of growth. This is sure to be one of the most generally grown when it is better known. *Mrs. G. Stevens* is a small leaved good habited sort not unlike in the appearance of its bloom that indispensable sort *Sœur Malanie*, only the flowers are one-fourth larger, and what is termed old gold as regards colour. It is well worth growing. *Reverie* is now comparatively old, but it is still one of the best decorative varieties, with a close upright though free branching habit of growth with beautiful foliage, flowers of good size, and a tawny shade of red, and much better than *M. J. Laing*.

M. W. Holmes is even better than the above, but as it is earlier the two sorts require to be grown. Earlier than the above is *Roi des Précoces*, which we have grown for several years. It seems to be comparatively neglected, though one of the very best of the bright coloured sorts. A new sort is *Capucine*, of a pleasing orange shade and very dwarf habit. *Bettina* is also new, of much the same shade as *Source d'Or*, but of much dwarfer habit than that really good old sort. When the terminal buds are taken *Val d'Andorre* may be had comparatively late, and is most useful. *King of the Crimson* is also good, and comes in earlier than the above. *Dr. Sharpe* when first open is also fine. Of yellow varieties *Mrs. Dixon* and *Mr. Glenny* are still among the very best. There is no difficulty in securing three to five dozen fine blooms on each of these, and if the buds are left unthinned the number is very great. *Chevalier Domage* is also good, *Phœbus* excellent, and *Peter the Great* when well thinned has not as yet been excelled. *Alice Bird* is a light shade, but not, I think, so good as some others.

Among white varieties are *Mrs. Rundle*, extra fine; *Elaine*, perhaps the best; *Mdlle. Lacroix*, very good; *Jeanne d'Arc*, good when well grown; *Condor* I expect will prove one of the best of the medium late varieties; *Mrs. Forsyth*, dwarf, free, and good; *Felicity*, also good. All these sorts give much better returns than does the cultivation of a large number of varieties, keeping in view, of course, the supply of a large quantity of good flowers from a limited number of plants.

Of outdoor sorts not one has as yet surpassed *Précocité* for a good yellow, early, and continuous in flowering. *Fred. Pélé* is the best of the darks, and *Madame Desgrange* of the whites. The newer varieties have not given the satisfaction I expected. *Leoni Lassali* is some-

what of the same shade as *Elsie*, but lacking its attractiveness. Another season I hope to be able to give these a better position than in the past. *La Vierge* should be grown in every collection, and very neat is the dwarf yellow *La Petite Marie*.—B.

FUNGUS ON PEACHES.

YOU were kind enough to measure the Peaches I posted to you a short time since and to speak approvingly of them. As I then stated, they were gathered from large newly planted trees which had the three previous seasons been attacked with fungus, thereby causing the fruit to be useless. I will give for the benefit of your readers who may be placed in such a position as I was a full description of the treatment which proved so satisfactory. I know of two places in this neighbourhood where Peaches are grown largely, and the gardeners are trying to eradicate this same destructive disease, but up to the present their efforts have proved fruitless. I hope they are diligent readers of this valuable Journal, so that they may follow my practice and reap the same beneficial results.

I have two houses in which the trees have been attacked with this fungus. One, which I will call the large house, is 60 feet by 12 feet, and the small one is 40 feet by 12 feet; they are lean-to's and face due south. The trees are trained on the back wall, and there are two rows of pyramids in pots along the front. The trees in the large house were on the wall before the house was built, but I have never heard of any disease attacking them previous to the house being placed over them. In the small house the trees were all fresh planted, and those in pots obtained from a nursery. I mention these facts so as to make the case as clear as possible. I must necessarily give a rather long account, for I have had to battle against this disease for three years. I may also state I have sent leaves, fruit branches, and roots to some of the leading fruit growers of the day, and have also had them come to see and give their opinion on the whole matter, but not one of them suggested that a fungus was the origin of the evil. Some of them were confident it was at the roots, while others were equally as

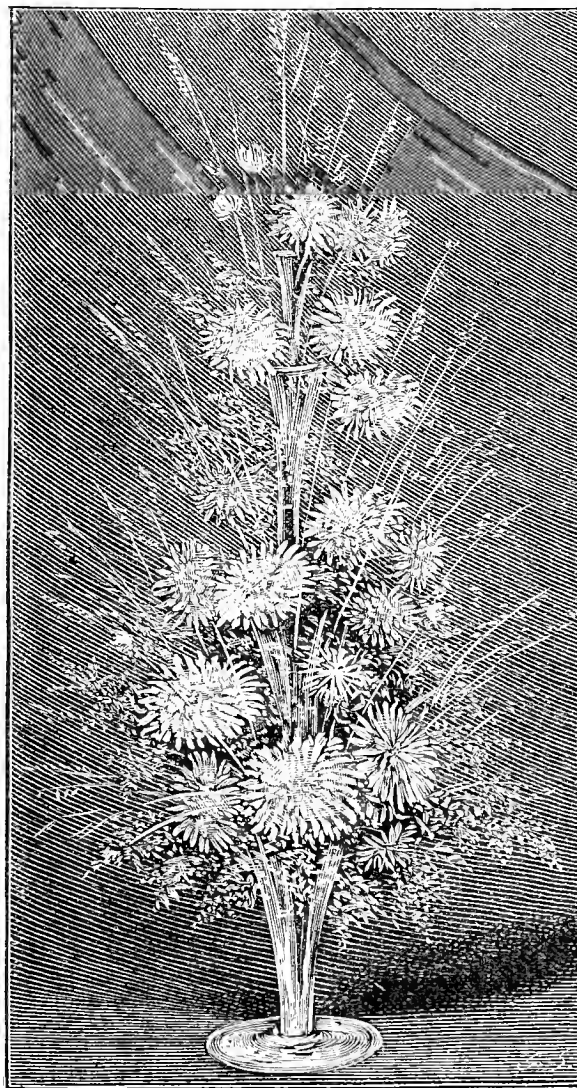


FIG. 64.—A STAND OF CHRYSANTHEMUMS.

confident it was a scald by the sun's rays early in the morning before air was admitted.

I will now try and give a description of the fungus. It is on its first appearance so minute that it cannot be detected by the naked eye, but after about a week it is clearly visible, and the fruit looks as though it had been punctured by a pin; as the fruit grows the black dot becomes larger until it attains the size of a pea, and then you can see plainly a little white speck quite in the centre of the black one, which remains stationary until the fruits have stoned; after this it spreads rapidly, and in many cases three parts cover the fruit, at the same time penetrates down to the stone, thereby completely spoiling the crop. It also attacks the leaves when they are quite young, and they appear as if scalded. The specks are so small that you can scarcely observe them, but as the leaves grow so do the specks until the leaf gets more matured, then the diseased part falls out and leaves them as though they had been perforated by shots from a gun. I have never observed a leaf that has been scalded to lose that part which has been burnt by the sun, but it will still remain as part of the leaf, therefore there is a material difference between a scald and this disease.

This fungus also fixes its spores on the young shoots, and if it should come in contact with the bud it quite destroys it. It is not much unlike a brown scale, and when the wood gets hard if the thumb nail is placed against it, it flies off, taking the bark with it. This is very destructive to the trees, for where they are subject to gumming this is a strong incentive to the complaint.

As I took charge of the trees when the fungus could not be detected, for it had not much hold the first year of their being under glass, at the proper time I had all the trees taken from the wall, and the house thoroughly cleaned, pruned, and dressed with the sulphur, soft-soap and soot, with a little petroleum added, and replaced in their former position. The dressing was in no way applied for a fungus, but was for the prevention of insects, but it had a most beneficial result. The trees broke well, the flowers set well, and everything went on in a most satisfactory way until the fruit was the size of small woodnuts, and then to my surprise I found when thinning a quantity with the black spots, as I have mentioned before. This state of things alarmed me, but on making enquiry I was told some of the fruit was quite spoiled the previous year. I had no other choice but to grow them through this season. I then determined to renew the border, taking this in hand in the month of November, removing all the old soil to within 2 feet of the stem, and replacing it with fresh cut turfy loam and a sprinkling of chalk.

Though the trees were grown steadily and were free from insects, I scarcely had one perfect fruit for table, although I had adopted the methods advocated by eminent fruit growers—viz., air drains, more top ventilation, and shading the glass; but still the disease rapidly spread, and in some instances almost denuded the trees of their leaves. I was now convinced the enemy was a fungus of some description, and treated the trees accordingly; cleaned the house as in the first year, cement-washed the walls with a good quantity of sulphur added, dressed the trees as before, but adding about a pint and a half bottle of mildew composition formerly made by the late Mr. John Bell of Norwich, and now, I think, sold by most nurserymen. I continued using this composition until the fruit was all well stoned, applying a wineglass to a gallon of warm soft water, and well syringing all parts of the house both night and morning.

Air was admitted abundantly both night and day, but knowing the Peach to be a native of a warmer climate, I gave them as much heat as possible this season. I am happy to say I have had a splendid crop of fruit this year, and the sample you approved was a fair one. I made a new border in the small house and replanted the trees, which have done equally well under the same treatment. The fruit sent to you was gathered from this house.—ALFRED BISHOP, *Westley Hall Gardens, Bury St. Edmunds.*

REINWARDTIA (LINUM) TRIGYNUM.

THIS old favourite in the autumn months is one of the showiest of warm greenhouse plants, and deserving of much more attention and extended cultivation than it at present receives. The flowers are bright yellow, an inch or more across, borne for the most part solitary in indifferent examples, but in well grown specimens they are produced in dense umbel-like clusters, and the flowers being produced successively the plants are well flowered, though the flowers individually are of short duration, over a period of a month to six weeks. A groundwork of these plants, with the scarlet bracts of *Poinsettia pulcherrima* rising above the glowing yellow of the *Reinwardtias*, is simply charming.

It is of the easiest culture. Cuttings should be taken of the strongest points of old plants, which may be cut back to furnish them in February, and placed in heat and inserted singly in small pots in April or early May, placing in a close propagating frame.

They will root quickly, and being inured gradually to the atmosphere of a stove or intermediate house they may be shifted into 6-inch pots when the first are filled with roots, and from these transferred to 7-inch, in each case allowing them to be fairly well filled with roots before shifting. The cuttings of course may be inserted around the sides of store pots, transferring them singly into small pots when rooted, and afterwards shifting to a larger size as advised. These make very useful plants, but noble examples are obtained by placing three plants out of the 3-inch pots into 8 or 9-inch pots, having them as near the centre as possible. The pots must be efficiently drained, and a compost of good fibrous loam torn up with the hand, the loam being preferably rather strong, with a third of leaf soil, and about a sixth of crystal sand intermixed. Pot rather firmly, and if a little soot or some approved fertiliser be added to the compost it will help the plants to a good start. Water carefully, but afford a full supply when the soil becomes dry and before the foliage flags. They never can have too much light after they leave the cutting quarters, everything depending on a sturdy, thoroughly solidified growth. Pinching should be frequently practised, say at about every 4 inches to 6 inches of fresh growth up to early August, and from that time they need plenty of air and all the light possible, as it is imperative the recently made shoots and the stubby growths that will come giving the umbellate clusters of bloom be thoroughly ripened for flowering. The plants should be watered with judgment, affording sufficient to keep the foliage good—i.e., to prevent flagging. If kept wet and in a close moist atmosphere they will grow finely with a fair display of solitary flowers later on through the wood being soft and unripened, which is not the way to see this plant at its best.

In late September place the plants in a house where they have ample light, and with a temperature of 55° to 65°, the night and day artificial heat respectively, and if given a little Thomson's or other artificial manure scratched into the surface with a stick the benefit will be seen in the flowers—their substance, brightness, and continuance. The atmosphere should be kept somewhat dry—rather no special means should be taken to supply moisture beyond a slight damping occasionally of dry surfaces, but in dreary November the weather is usually moist enough without any need of damping. In a cold and damp atmosphere they do not flower satisfactorily, but after they come into bloom the remaining flowers will expand grandly in a temperature of 50°.

After flowering the plants may be rested, keeping rather cooler and drier, and in February they may be pruned, placed in heat, and when pushed an inch or so be shaken out, repotted, and grown on through the summer. Old plants, however, are not nearly so strong and free as those raised from good strong selected cuttings. Red spider is sometimes troublesome—a clear indication of too dry atmosphere, which yields to the usual remedies, syringing being the best.—G. ABBEY.

STORING ICE.

ALTHOUGH storing ice cannot be called gardening, still, like many things only remotely connected therewith, the gardener has often to be the person responsible for the supply of ice, so that it behoves young gardeners especially to keep an eye on this matter, as it is frequently one of great importance in large establishments. The work being generally performed by the labourers, the chances are that the responsible man of the future—the young gardener of the present, to wit—will know less about the operations than his men unless he improves his present opportunities.

It may be urged that anybody can store ice, but it might with equal force be urged that any gardener can grow *Chrysanthemums*, and it must be admitted that there are two ways of performing that operation. That there are several methods of achieving fair results I am well aware. I have seen and tried several myself, and still feel that I have something to learn. There is the system of throwing scalding water over the ice, also that of salting it, both with a view of congealing it into a solid lump; although I must think that if it is properly pounded before it is shovelled into the house, and beaten as firm as possible after it is in, that salt or hot water is not necessary. There is also the system of using a little straw—merely putting a course loosely around the house as the work progresses, and that of tying it with three bands into bundles a little thicker than a man's leg and about 5 or 6 feet long, and packing these closely around. Although I cannot see that it makes any difference to the ice shrinking from the sides, the latter plan has the advantage of being much the cleaner and prevents many loose straws getting mixed with the ice, and is much quicker done, provided it is (as it ought to be) all tied up beforehand and stored away ready for the occasion.

Another point, and one I would like to get a little information upon from anyone who can speak from actual experience—viz.,

whether it is best to have the house hermetically closed when filled, or to have several grated air holes the size of a brick near the top, and not fill the passages with straw between the outer and the inner doors.

Independently of all these matters, it is well known that some houses are noted for keeping ice much better than others, not always on account of situation or exposure, but from causes which it may be difficult to determine. In some instances it might be a very simple matter if one could only find out what. I give an instance that came immediately under my own observation. A certain house had never been known to keep ice longer than about the end of July, and one man could give the experiences of half a century. Latterly it had fallen into disuse, when the estate changed hands, and it had to be tried again. On examining the drain it was found there was no trap. One was put in, and the ice kept as well as could be wished. A simple matter enough, but yet no one had thought of it during all those years.—H. C. W.

EUPATORIUMS.

MR. MUIR does well in calling attention to these useful decorative plants, and it is indeed a matter of surprise that they are not more frequently referred to in advertisement and other pages. Mr. Muir says they can be had in bloom from October until January, but the three sorts we grow continue in succession two months later than that date, but perhaps reference is directed more particularly to the shrubby *Eupatorium Weinmannianum*. It is strange, too, that such doubts exist as to the correct names of these *Eupatoriums*. In not one of the several gardens in which I have served were their varietal or specific titles known with certainty, nor have I been able to strengthen my knowledge by inquiry of many visitors from time to time. The autumn flowering variety is succeeded by the dwarf branching one, the sprays of which are not so pure in colour, nor do they produce such large spreading heads; still it is useful in providing material for the conservatory and for cutting in good succession, which at a dull period is of great value. It never grows tall under any conditions, but forms a flat spreading bush completely hiding the pot, and makes a splendid plant for standing in vases indoors on that account.

The last of the trio makes a tall upright growth, and have furnished us with its large pure white sprays for Easter decorations at a time when that festive season has been early in the year. The stems of this latter sort are glutinous, which recalls to my mind an exaggerated statement once made to me by a lady, to the effect that each time flowers were cut from this plant the use of a fresh pair of gloves was necessary. Whether this was true or not, periodical visits were paid so long as the supply lasted for church and house adornment, and their pure white heads command attention either on the plant or in a cut state. If I have made my case sufficiently clear, perhaps some reader may be able to give the proper names of these deservedly popular plants, and I am sure the information, if forthcoming, would be acceptable to many admiring readers of the esteemed *Journal*, in disposing of the confusion that has long since existed with regard thereto.

The two last-mentioned sorts are softwooded and of quick growth. Cuttings struck in spring make plants large enough for any purpose when planted out in open garden during summer; but the earlier blooming autumn varieties may be retained for two or three seasons or more with advantage for furnishing large conservatories, as the growth thus made is harder and less rapid in its progress and maturity. Plants retained in large pots form short stubby growths, and provide a complete mass of bloom; but some cuttings should be struck annually, as these give the largest heads of looser character, and are valuable for room furnishing.—W. S.

VEGETABLE GARDENING IN SCOTLAND.

CULTIVATORS in northern parts will be ready to endorse much of what Mr. Pettigrew said in his opportune remarks at the Horticultural Association's meeting held in Cardiff. However, we do not think it is necessary that there should be less vacant ground in Scotch gardens during the autumn or winter months, or any other period during the year, than in any English gardens, though a few things do much better and come into use quicker in the south than the north. We think that in any garden it is thoroughly discreditable to have much vacant land lying uncropped at this season of the year. We have not a yard to dig up at present, except a portion from which late Potatoes have recently been removed, and that could easily have been filled by transplanting Cabbage, thinnings of Spinach or Lettuce therein; but the space, being wanted for another purpose than vegetable growing, is now empty. Under these times of high pressure few gardens in any part of the kingdom can be manipulated only to supply one crop during the year. What Mr. Pettigrew asserts regarding calendars and instructions for southern cultivation only is absolutely true, and while we have half a

dozen horticultural serials weekly as reading material, there is not, as far as we can see, any help in calendars for the helpless Scotch for planting, sowing, or other kitchen garden management. We have never experienced such severe frost or hot sun in Scotland as in southern English counties, but think vegetable management easier in the north than in England. We cannot say much about climatic influences in the north of England, but have had fair opportunities of noticing for the best part of a quarter of a century what can be done in east, west, and south of England. Beginning as a boy in London market establishments, we had to witness varied methods of turning means to best account. Practice in the north should not be exceptional.—M. TEMPLE, *Stirlingshire*.



AT a general meeting of the ROYAL HORTICULTURAL SOCIETY, held on Tuesday last, in the Drill Hall, London Scottish R.V., James's Street, S.W., T. B. Haywood, Esq., in the chair, the following candidates were duly elected Fellows—viz., C. F. Barker, Mrs. Bovill, Mrs. Bernard E. Brodhurst, Edmund T. Chamberlain, Norman Cookson, Thomas A. Cotton, Walter James Green, Charles Holden, A. Wells Ingram, Mrs. Kemp-Welsh, James Lake, R. Veitch Mather, Commissary General Hy. Moore, John Brandram Morgan, George Newman, Frank Rich, Ronald A. Scott, David Storrie, S. Stubbs, and Robert Willan.

—EVENTS OF THE WEEK.—Preparations for Christmas are now occupying the attention of many persons, and the markets begin to afford evidence of a busy period. There is scarcely anything to record in the shape of business meetings, but one even will no doubt attract many horticulturists to London on the 19th inst. That is the annual dinner of the National Chrysanthemum Society, when Lord Brooke will preside, and such an excellent programme has been prepared that a large attendance may be expected.

—THE WEATHER IN THE SOUTH OF ENGLAND has been variable during the past week. Frost continued until Saturday, when there was a moderately heavy fall of snow, which, however, rapidly melted on the following day. Early in this week the temperature became much higher, but with clear weather frosts returned, and it was somewhat sharp on Wednesday morning.

—IT is announced that a series of HORTICULTURAL EXHIBITIONS will be held at the Royal Aquarium, Westminster, during 1890, as follows:—January: Midwinter Exhibition of the National Chrysanthemum Society. March: First Spring Exhibition. April: Second Spring Exhibition. May: Early Summer Exhibition. June: Grand Rose Show and Fête. July: Grand Summer Exhibition. September: Early Autumn Show of the National Chrysanthemum Society. October: Great Autumn Exhibition. November: The Centenary Festival of the National Chrysanthemum Society. Suggestions as to dates, suitable classes, schedules (which are now in course of preparation) are specially invited, will receive careful consideration, and be adopted as far as possible. For all information, apply to William Holmes, Superintendent Frampton Park Nurseries, Hackney, London.

—THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL DINNER will be held at Anderton's Hotel, Fleet Street, on Thursday evening, December 19th, when the President of the Society, Lord Brooke, M.P., has promised to preside. The following are also expected to be present:—Sir Guyer Hunter, K.C.M.G., M.P.; Sir Edwin Saunders; Shirley Hibberd, Esq.; Walter Johnson, Esq., L.C.C.; John Lowles, Esq., L.C.C.; Edwin Sanderson, Esq.; C. E. Shea, Esq.; H. Veitch, Esq.; Rev. W. Wilks; J. L. Wood, Esq., &c. The Society's trophy, medals, and prizes awarded at the recent Exhibition at Westminster will be presented on the occasion. The musical arrangements are under the direction of Dr. J. F. Haskins, which is a sufficient guarantee for an excellent programme. Mr. Holmes requests that those intending to be present will let him know how many tickets they will require by Monday, December 16th. Dinner will be served at six o'clock precisely; the tickets will be the usual price.

—CHISWICK GARDENERS' ASSOCIATION.—A well attended meeting of this body was held in the Council-room at the Royal Horticultural Society's Gardens on Friday evening last, when Mr. J. Barry read an interesting paper on "School Gardens," advocating where pos-

sible the formation of small plots as gardens to our schools as a means of recreation and instruction for the children. Additional interest was imparted to the proceedings by the fact that Mr. George Mitchell ("One from the Plough") attended and gave his warm support to the various suggestions throughout in the address. It may be remembered that Mr. Mitchell was a member of the London School Board when first established, sitting for the Chelsea Division. One of the best discussions of the session took place. Mr. George Gordon, the Chairman of the Association, ably presided.

— PROFESSOR MARSHALL WARD is about to deliver at the City and Guilds of London Institute a course of six lectures on *TIMBER, ITS NATURE, VARIETIES, USES, AND DISEASES*. The lectures will be given on Monday and Thursday evenings at 7.30 (December 12th, 16th, and 19th, and January 23rd, 27th, and 30th). The object of the course is to explain as simply and clearly as possible, with the aid of numerous lantern illustrations, the nature, properties, varieties, and uses of the ordinary timbers used in construction, and to give an intelligible account of dry rot, and allied diseases of timber.

— WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—A meeting of this Society was held in Ware on Tuesday evening, the 3rd inst. This is the third successful meeting held by this young Society. A paper was read on "Hardy Fruit" by Mr. Wallis, which was listened to by an attentive audience. A discussion followed by the following members:—Messrs. Fulford, Brown, Smith, Phillips, and Ridg. A hearty vote of thanks was accorded to Mr. Wallis for his paper, and the meeting terminated with a vote of thanks to Mr. R. Smith for occupying the chair.

— VINES FOR SHADED HOUSE.—Will you kindly insert the following in the *Journal of Horticulture*. I am in charge of a vinery, aspect due north, the wall on the south being high enough to exclude the sun's rays from October till March. I am growing in it Muscat of Alexandria, Mrs. Pince, and Alicante. These do fairly well with the exception of Mrs. Pince, which fruits well but does not colour. I have now room for two more Vines in the same house, and should be glad of advice as to the best other sorts to grow in such a position. They must be late keeping. I should like to grow Gros Colman, but I am afraid it would be quite useless to plant one. A reply from a practical man will be much appreciated.—A. B. C.

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY, to be held at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 7 P.M., the following papers will be read:—"Report of the Wind Force Committee on the Factor of the Kew Pattern Robinson Anemometer," drawn up by W. H. Dines, B.A., F.R.Met.Soc.; "On Testing Anemometers," by W. H. Dines, B.A., F.R.Met.Soc.; "On the Rainfall of the Riviera," by G. J. Symons, F.R.S.; "Report on the Phenological Observations for 1889," by Edward Mawley, F.R.Met.Soc. As the draft list of officers and Council for the year 1890 will be prepared at the next Council meeting, it is requested that those Fellows who wish to suggest names for the new Council will send them in before 18th inst.

— THE WEATHER IN NOVEMBER.—November opened very mild and continued so, with the exception of the 5th, 6th, and 13th, until the 25th, when frost set in rather sharp, and continued to the end of the month. Rain fell on twelve days, the heaviest fall occurring on the 24th, when 0.24 inch fell. Total fall for the month 0.76 inch. Highest shade temperature, 60° on the 8th; lowest, 26° on the 13th, 28th, and 29th; lowest on grass, 21° on the 28th and 29th. Number of days at or below 32°, in shade 8, on grass 13. Barometer variable; highest reading, 30.70, on the 18th and 19th; lowest, 29.40, at 9 A.M. on the 25th. Garden spring running 16 gallons per minute on the 30th. I may mention in passing that on Thursday, December 5th, at 9 P.M., the barometer stood at 30.80, a height to which our records do not show an equivalent.—J. TUNNINGTON, *Ketton Hall Gardens, Stamford*.

— READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The usual fortnightly meeting of this Association was held on Monday at the British Workman, when a large number of members assembled to hear a paper on "Primula sinensis," by Mr. James Martin (Messrs. Suttons' able cultivator). A collection of Primulas, kindly lent for the evening by Messrs. Sutton & Sons, was arranged at one end of the large room, and made a grand display, giving evidence of the lecturer's skill as a cultivator of the Primula, and his ability to deal with the subject. The President (W. I. Palmer, Esq., J.P.)

spoke of the great improvement made in the Primula during the last few years, and also of the great pleasure it gave him to be present on this occasion. During the discussion which followed various questions were put to the lecturer, all of which were ably answered, and much useful information was disseminated.

— WE are informed that on the occasion of the visit of H.R.H. Princess Beatrice, Princess Henry of Battenberg, to Reading last Tuesday, Messrs. Sutton & Sons had the honour of presenting Her Royal Highness with a magnificent bouquet of Orchids, of which the Princess expressed her appreciation.

— MESSRS. FOSTER & PEARSON send us from Beeston a copy of their Sheet Almanack for 1890. It consists of twelve removeable sheets, with the days and dates in each month prominent, and a margin of reminders of seasonable work in gardening. It is useful for gardeners' cottages and offices, in many of which it will doubtless find a place, and be serviceable throughout the coming year.

— DIARIES.—We have received from Messrs. Griffith, Farran, Okeden, and Welsh specimens of their diaries for 1890. They embrace almost every imaginable size and form that can be applied to these useful works, some being suitable for the desk, the library table, and the pocket, while others are so mounted that they can be hung against a wall. Apart from their utility as records of coming or past events, they abound in a mass of information easily accessible, which is an everyday want.

— MRS. PEARSON GRAPE.—In the fine range of vineries of Mr. James McIntosh at Duncreevan, Walton-on-Thames, the crop of this Grape is the most satisfactory of all. The bunches are large, well-shaped, and full; berries fresh, firm, without signs of shrivelling, round, about the size of medium Black Hamburgs, and clear amber in colour, without rust or speck, except in one bunch immediately over the hot-water pipes. They are distinctly perfumed, the scent reminding of Lilies of the Valley, but fainter. The berries are fleshy, rich with an agreeable aroma, and Mr. Taylor regards Mrs. Pearson as the most delicious and satisfactory of white Grapes for Christmas use and subsequently; but it is fair to observe that it is not everywhere grown so well as at Duncreevan. Mr. McIntosh's many friends will rejoice to hear of his much-improved health; in fact, it would appear as if he had taken a new lease of life, and there is every reason to think he will enjoy his pleasant home and beautiful garden more than has been possible during the past few years.

— SCHIZOSTYLIS COCCINEA.—I have never seen this flowering so profusely as it is this season. We have about 200 large clumps of it. Some are growing at the foot of a south wall, others are planted on a north border. In both situations they are a most brilliant sight at this season of the year, when hardy flowers are so scarce. In addition to their free flowering qualities they are exceeding valuable in a cut state. I find them last a fortnight when cut by changing the water about twice a week, at the same time cutting off a portion of the foot of the stalk and removing any decaying flowers on the buds as the spike expands. The foregoing are, I think, sufficient qualifications to make it deserving of space in every garden. It is generally considered a half-hardy bulb, but here (south of Ireland) it is perfectly hardy, receiving no protection whatever, and never fails at this season to yield a bountiful supply of spikes. Now, after ten days of frost, on the 28th ult., hundreds of spikes are available for cutting, after meeting all house demands.—HANDY ANDY.

— WAKEFIELD PAXTON SOCIETY.—Programme of meetings for the fourth quarter, session 1889-90. Meetings are held at the Society's Rooms, Saw Hotel, Westgate, each Saturday evening, commencing at eight o'clock prompt. December 14th, 1889.—"Migration of Birds;" Mr. J. Gerrard. December 21st.—"Arboriculture;" Mr. James Reed, Batley. December 28th.—Musical Evening (Sale of Periodicals). January 4th, 1890.—"Reminiscences of a Visit to Canada;" Mr. W. Hampshire. January 11th.—"Winter Notes," Mr. G. Bott. January 18th.—"Mignonette for the Conservatory," Mr. J. P. Carter. January 25th.—"The Cineraria," Mr. T. Gartery, Rotherham (Sale of Periodicals). February 1st.—"The Water Flea and the Water Weed; a Talk about Life;" Mr. T. Tate, F.G.S., Leeds. February 8th.—"The Cultivation of Hardy Fruits," Mr. G. Hudson. February 15th.—"The Cultivation of the Cabbage," Mr. J. G. Brown. February 22nd.—"Behind a Postage Stamp," Mr. W. Pye (Sale of Periodicals). March 1st.—Annual Meeting.—G. W. FALLAS, T. GARNETT, *Hon. Secs.*

— WE regret to announce the sudden death of DR. W. R. McNAB. He died at his residence in Dublin on Tuesday morning, the 3rd inst. Dr. McNab was Professor of Botany in the Royal College of Science, Dublin, having succeeded Professor Thiselton Dyer, F.R.S. He was also Scientific Superintendent and Referee to the Royal Botanic Gardens, Glasnevin, under the Science and Art Department. He appears to have been in his usual health on Monday, and on St. Andrew's Day (Saturday) took an energetic part in the meeting and banquet held by the Scotch residents in Dublin. The remains of the late Professor were interred on the 6th inst. A long line of carriages followed the hearse, and prominent amongst the mourners were the Professors and other officials connected with the Royal College of Science for Ireland. The chief mourners were the Rev. John Goold, Glasgow, brother-in-law; Mr. James McNab and Mr. Ramsay McNab, sons of the deceased; and Professor A. C. Haddon, M.A., Dean of the Faculty, Royal College of Science. The general attendance included the chief men of science, arts, and letters in Dublin. The interment took place in Mount Jerome Cemetery. The Rev. J. D. Osborne, Presbyterian minister, conducted the burial service.

— AMERICAN BLACKBERRIES.—In the note from "South Wales," in the last issue of the Journal, the writer says he never could grow or find any of them to merit ordinary praise, and further that he could not hear of a good crop. As to the former, it is perhaps not altogether the fault of the Blackberry; and as to the two latter, had the writer paid a visit to Hummersknott, Darlington, the residence of Arthur Pease, Esq., during last October, he would have seen a crop of American Bramble that would have probably astonished him. These plants were planted, I believe, four years ago, and are trained up an iron fence, and always bear good crops; but owing to early frosts they, like the native varieties, do not always attain maturity. "South Wales" also advises those who like Blackberries to plant our native varieties. I should be pleased to learn if he or any of your numerous correspondents have done so, and with what results.—DE NOVA. [A fine English grown specimen of the Parsley-leaved Bramble (*Rubus lacinatus*) has been illustrated in this Journal, and we have seen several most praiseworthy examples of culture. Perhaps when our correspondent "travelled from Land's End to John o' Groat's" it was by an express train.]

— PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—The monthly meeting of the above Society was held at the Castle Hotel, Preston, on Saturday evening, December 7th. Through the unavoidable absence of the President, Alexander Ellis, Esq., occupied the chair, and was supported by Councillor Harding and members to the number of about fifty, the subject for the evening being the Melon. "Its Cultivation in Houses and Frames" was the title of a paper prepared and read by Mr. Williams, head gardener, Penwortham Priory. The essayist treated his subject in a thoroughly practical manner, from seed sowing in thumb pots to the planting out in suitable composts, training, fertilising, and ripening of the fruit. The reader was a little in favour of the extension system, but during an interesting discussion which followed, it was urged that planting fewer plants at intervals, according to the requirements, was much preferred to having plants with fruits of various sizes and in different stages of development. The cankering and decay of the main stems, so prevalent with some growers, was considered to be the result of a too free use of the syringe in houses where the water does not leave the plants sufficiently to render them thoroughly dry for a few hours each day and night. A hearty vote of thanks was accorded the reader, and also the Chairman. Many interesting exhibits were also acknowledged by the thanks of the meeting. It is gratifying to note the ever increasing interest and support extended to these monthly gatherings.

— SCOTTISH PRIMULA SOCIETY.—The annual general meeting of the Scottish Primula and Auricula Society was held recently at No. 5, St. Andrew Square, Edinburgh, Mr. Alexander Milne, Edinburgh, presiding. Mr. W. Stratton, Broughty Ferry, the Hon. Secretary and Treasurer, submitted a report upon the third annual Show held in the Calton Convening Rooms, Edinburgh, last May. The Show, it was stated, had been in every way successful. Exclusive of the species and varieties sent in for exhibition, about 300 plants were staged for competition. Mr. Stratton's financial statement indicated that with the balance of £10 9s. 6d. from the previous account, the year's income amounted to £37 5s. 6d.; while, on the other hand, the expenditure for the year amounted to £29 15s., leaving a credit balance of £7 10s. 6d. The loss of £2 19s. on the year's working was largely due to the falling off in subscriptions, which showed a decrease of £6 18s. The entrance money, however, showed a substantial increase, the attend-

ance at the Show having been about double that of the previous year. On the motion of Mr. Robert Lindsay, Curator, Royal Botanic Garden, Edinburgh, seconded by Mr. James Grieve, Pilrig Park Nursery, Edinburgh, both reports were regarded as satisfactory, and adopted. A letter was read from the President, Mr. Cathcart of Pitcairnie, suggesting that next year's Show might be held in Dundee. The proposal seemed to find general approval in the meeting, but before deciding on the change it was decided to take the opinion of the members on the matter. The office bearers were re-elected, and it was remitted to the Committee to adjust the schedule for next year's Show, adding prizes for Daffodils or Narcissus. The Secretary said, in reply to a question, that if the meeting were to be held in Dundee there would be no difficulty in getting a local Committee, and that the nurserymen would be ready to give them every assistance in filling the hall, which was larger than they had hitherto had, and was well lighted. The Chairman, in moving a vote of thanks to the Secretary, said that the most of the work of the Society devolved on Mr. Stratton, and that he did it most ungrudgingly and heartily. The motion was heartily agreed to.

GROUPING PLANTS AND FLORAL DECORATIONS.

I HAVE read Mr. L. Castle's able article on "Lessons of the Past Season" with great interest, and I should like to add a few observations chiefly upon the troubles caused to exhibitors by the vague wording of schedules. With regard to the employment of foliage plants in groups of Chrysanthemums there is a danger unless it is made very clear that they would possess more weight with judges than the plants for which the classes are chiefly intended. I think it would be more satisfactory to exhibitors to have two classes, one to continue as they have been, and the other for a group of Chrysanthemums and foliage plants, not to exceed so many feet, arranged for effect, Chrysanthemums to predominate and to be the only flowering plants used. I am not sure if it would not be advisable and bring a better competition if the latter class took the place of the former as a trial. Of this I am certain, if there is to be only one class and no limit is given to the foliage plants, the judges will be puzzled, and the exhibitors too, and neither would be perfectly satisfied. I am also sure that some of the exhibitors of groups of Chrysanthemums have not a good collection of Palms and other foliage plants, then it follows that the best foliage group would be the most pleasing and more likely to win. Whatever is done make it definite; it will be more pleasant for all concerned.

This brings me to the other part of the article respecting the exhibition of devices in St. Stephen's Hall; and here I contend that, through the uncertain reading of the schedule, the classes have caused some discontent. First I will deal with the hall vase of Chrysanthemums with any kind of foliage; now, as an old exhibitor, I should always carefully avoid using grasses, for fear any exhibitor would object, as I think he would have a right to do. I know perfectly well what effect a few grasses judiciously used have in any decoration, and I am certain it was the grasses and not the Chrysanthemums that had most weight with the judges. I quite admit it was the best-looking stand on the table. In this case also let the schedule read, "A hall vase of Chrysanthemums with any kind of natural grasses and foliage, not to be dressed at the base, and the whole when finished not to exceed 4 feet in height;" you would then get a uniform exhibition, and place all the exhibitors on an equal footing.

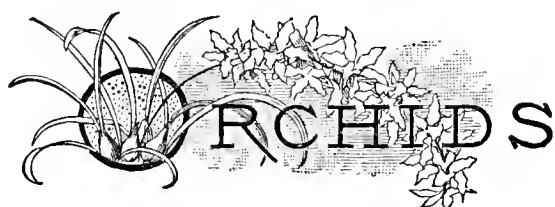
Now I come to the last and most important exhibit, the class for devices, and I must congratulate the donors on the splendid display such small prizes brought; and I also think the Society would do well to encourage this class liberally, either as a whole as this year, or in separate classes, and also to make this reading quite plain to exhibitors. If grasses are to be admitted, say so; but do not allow any other flowers to be used. The National is a Chrysanthemum society, and it should not allow other flowers to be employed in such competition.—W. BROWN.

THUJA OCCIDENTALIS.

THIS, the American Arbor-Vitæ, makes a capital hedge, and is well suited for many positions, especially where not exposed to strong gales of wind. It answers better in partially shaded places than many other shrubs do, and with those who understand its nature and the kind of treatment necessary to make it accommodate itself to certain positions very pleasing screens may be formed to hide unsightly walls. I have seen such screens, and have dressed some of them. For hedges of this shrub to have a pleasing appearance they should never be clipped with the shears, as by doing so you give them a stumpy appearance, which it is desirable to avoid.

This Arbor-Vitæ is employed in many nurseries to form screens for giving shelter to plants while they are in a young and tender state, and for this few shrubs are better adapted when judiciously managed. They can be kept very thin and green down to the ground for many years, while they are devoid of that stiff and shorn appearance which most hedges have. They occupy very little space, and to prevent their roots spreading cut them with a spade at about a foot or 15 inches from the stem. By doing one side one year, and then the other side the following year, the roots will be kept from impoverishing the ground or from

injuring young plants which may be near to them. When planted against walls the leader and main branches as they grow should be fastened to the wall by means of iron staples passing round them and into the wall. When the Arbor-Vitæ is judiciously managed in such a position, and having all the unnecessary breastwood cut off with a knife, it has a graceful and Fern-like appearance, which is especially pleasing when the wind ruffles its feathery sprays; indeed, under the management of a person who understands how to train and manage the Arbor-Vitæ, it is so accommodating that it can be turned to many useful and ornamental purposes.—D.



CYPRIPEDIUM T. B. HAYWOOD.

THIS was obtained from a cross between *C. Drurii* and *C. superbians* (Veitchi), and has neat and pleasingly marked flowers. One of the characters of *C. Drurii* is preserved in a marked degree—namely, the dark central lines in sepals and petals, which in the hybrid assumes a purplish hue. The rounded dorsal sepal have also secondary smaller and fainter radiating veins of purple and

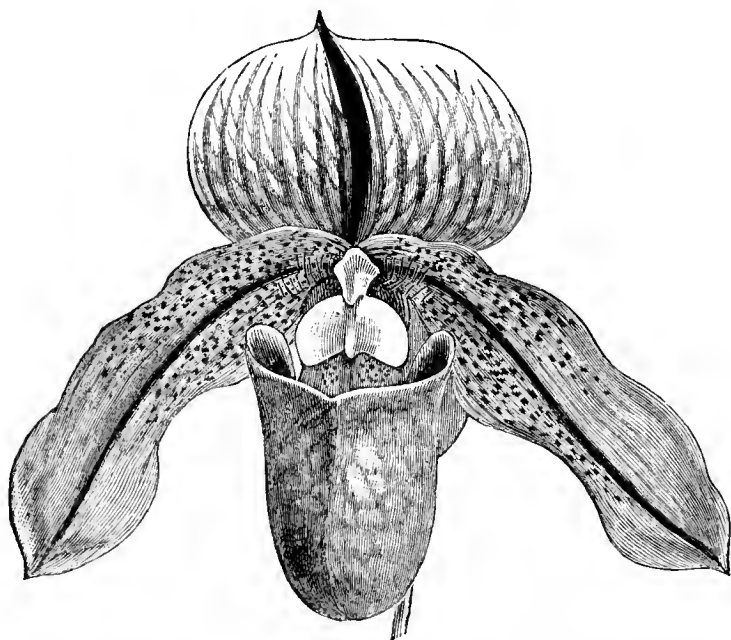


FIG. 65.—CYPRIPEDIUM T. B. HAYWOOD.

green on white, something in the way of *C. superbians*; the petals have numerous purplish dots at the base, and the lip is suffused with soft purple tint. Neither of the species named as parents have been much employed in hybridising. *C. Drurii* is one of the parents (with *C. niveum*) of *C. microchilum*; it was employed with *C. villosum* in the production of *C. Winnianum*, but these are not very well known. *C. superbians* was, however, employed with *C. Stonei* in the production of the famed *C. Morganæ*, and with *C. barbatum* in producing *C. superciliale*, also a handsome hybrid. On Tuesday last this *Cypripedium* was exhibited by Messrs. J. Veitch & Sons at the Royal Horticultural Society's meeting in the Drill Hall, James Street, Westminster, when an award of merit was granted by the Orchid Committee. In our sketch the flower is slightly reduced.

ANGRÆCUM HYALOIDES.

M. GODEFROY LEBEUF'S *Orchid Journal L'Orchidophile* for November contains an excellent coloured plate of the above-named small but charming *Angræcum*. It is depicted growing in a basket, and has a number of short racemes of flowers clustered round the base of the leaves. The sepals, petals, and lip are white, semi-transparent, and nearly equal in size and shape, being acutely tapering. The flowers are very small for an *Angræcum*, the racemes being only a few inches long; but the plant is a little gem, and is highly prized in several collections in this country.—C.

A FLOWER HOUSE.

WHERE Orchids are grown in large numbers there should be one house devoted to those in flower. Its size must depend upon

the quantity of plants grown. The temperature of the structure would suit all the various occupants if maintained about 55° at night, and a few degrees higher during the day would do no harm. When in flower these plants unquestionably look best tastefully arranged amongst dwarf-growing Ferns and Mosses. Perhaps no variety is more suitable for this purpose than the old *Adiantum cuneatum* and *Selaginella Kraussiana*. A few small Palms may also be employed with advantage, but these should be light, after the style of *Geonoma gracilis* or *Cocos Weddelliana*, or they are better dispensed with unless they are used as a background. When a groundwork of Ferns is employed few plants are needed to make a brilliant display. This can readily be accomplished now that *Calanthes* in variety are plentiful. Those that cannot spare a structure for this purpose might devote a portion of their conservatory to Orchids while a good number are in flower. Care is needed that cold draughts are not admitted or the plants carelessly watered while in this structure.

CATTLEYAS.

Examine and thoroughly cleanse all Cattleyas, as it is much better to do this work now than when they commence producing their flowers, or the formation of new growth and roots. White scale is very troublesome, and is often upon them when they are imported. The only means of cleaning them is by the aid of a sponge and a little softsoap. Infested plants should be stood as much as possible together, so that they can be attended to frequently.

THE TEMPERATURE.

Care is needed for the next two months not to maintain too high a temperature; keep it steadily at 60°, a little more or a little less according to the weather will do no harm. It is better during very severe weather to allow the temperature by morning to fall 5° than overheat the pipes; a dry overheated atmosphere is certain to prove injurious to Cattleyas. It compels the application of water to the plants more frequently than is good for them, and yellow thrips quickly appears, giving endless trouble. No more water is needed now than will keep the pseudo-bulbs and foliage fresh and plump. By no means should they be allowed to shrivel by the want of water. Damp the stage and floor of the house thoroughly, when a little extra fire heat must be used.

PHALÆNOPSIS.

These must be carefully watched for the next few weeks. Do not arrange them too close to the glass or they may be injured during severe weather; let them be 2 feet from the roof. Now they are kept dryer, and the atmosphere of the house also, thrips will attack them if there are any about. Examine the plants carefully at least twice a week, and the first trace should be destroyed at once by sponging with a weak solution of tobacco water. If these pests are allowed to become numerous on the plants they quickly destroy their foliage and are most difficult to eradicate. The best plan under such circumstances is to sponge the leaves daily. Strong measures that can be used to some plants cannot be practised with these without injurious results following.

VANDAS.

These, *Aerides*, *Saccolabiums*, *Cypripediums*, and others, should never be allowed to become so dry as Cattleyas and *Dendrobiums*. The material in which they are growing must never become destitute of moisture, as this is frequently the cause of the lower leaves turning yellow prematurely. Watch for scale, and remove it at once by sponging the same as advised for Cattleyas. Yellow thrips are the greatest enemy to these plants, and although they bear light fumigations without injury, we prefer to avoid subjecting them to this treatment as much as possible. They are generally attacked at the top first, and the best means we have found is to dust the plants well with tobacco powder. It should be washed clean from the heart of the plant and axils of the leaves three or four days afterwards.—ORCHID GROWER.

EVERGREEN OAKS.

IN the private grounds surrounding the residence of Mrs. Alured Denne of The Grange, Lydd, Kent, are some remarkable specimens of the Evergreen Oaks. The largest one is quite 50 feet in height and about 78 feet in diameter. The branches, which touch the ground, are of the same proportion at the top as well as the bottom, so that the tree is very noble in appearance. There are others of less age and size in close proximity to the largest with a 6 feet bole, as well as perfect in shape and health, and situated as they are on the east side of the mansion they form an excellent shelter from the east winds, which have a clear sweep from the sea across Romney Marsh. The girth of the large tree 3 feet from the ground is 16 feet and 6 feet from the ground several branches spring out, two of the largest measuring 5 feet round

at 6 feet from the body, but several large branches have been cut years ago to give room for those remaining.

Romney Marsh land has long been noted for its rich herbage. The soil is very dark, and in some places a good depth, being probably at one time a sea bottom, consequently leaving a deposit of a very rich and fertile nature. The trees above mentioned are growing in some of the best of soil, which is resting on a mixture of beach or shingle and sea sand, under which lies a thick bed of dark clayey soil though not of a poor nature. But not only do Evergreen Oaks thrive here, and also large trees of Acacias 40 feet in height, as well as Variegated Hollies, while against the house are fine plants of Roses 20 feet up the wall, while the windows are encircled by fine plants of the large-leaved Myrtle all in full health.—THOMAS RECORD.

SOME USEFUL PLANTS.

THE following is a list of plants that I have found serviceable during the present and recent seasons:—

GLADIOLUS.

Dr. Bailly, a glowing soft scarlet, is going to prove one of the best. Also very fine is Panama, another of the 1888 varieties. Snowdon, an English raised variety, was exhibited in fine form. I have not yet secured this sort, but evidently it is one of the very finest. Enchanteresse has again been fine. Amitié, one of the soft shaded sorts, is one of the hardiest and also one of the grandest kinds. Indispensable also are Dalila, M. A. Brongniart, Sultan, Penelope. Shakespeare, Ondine, white, with soft violet markings, a lovely sort; Matador, Grand Rouge, Bicolore, Panorama, Flamboyant, very bright, Horace Vernet, extra bright; Diamant, very pretty; Baroness Burdett Coutts, Crépuscule, Eugène Souchet, rose, beautiful sort; Opale, soft, fine; Pasteur, extra fine soft rose; Pyramide, Sceptre de Flore, Fra Diavolo, very fine; Lady Bridport, are all sorts which are of free healthy growth, and should be grown by all who admire these highly decorative flowers. I was able to flower Duchess of Edinburgh this year; a single corm I procured from Dicksons, Chester, was cut in four, and gave three spikes. For northern gardens I should not recommend it, being rather late to be useful. I wonder why brenchleyensis is not cultivated more generally. It is certainly one of the best hardy flowers, cheap to buy, and the best of decorative flowers. Bossuet, crimson; W. E. Gumbleton, Lafayette, Lamartine, Lemoinei, Alsace, Sceptre d'Or, bright yellow; Etendard, A. Chenier, soft; Etoile, very beautiful, belong to Lemoine's hardy hybrid section, and all worth growing. Cultivators of hardy flowers must be on the outlook for the new hybrids originated by M. Lemoine, and which he has christened G. Nanceianus. Nine varieties are offered, two of which have already received first class certificates from the Royal Horticultural Society. The best appear to be President Carnot, P. Duchatre, Comte H. de Choiseul, and Maurice de Vilmorin.

CARNATION MRS. REYNOLDS HOLE.

In the Journal some months ago this variety had a rather bad character given it. I had a bed of it, and with me it proved one of the strongest and freest flowering sorts, and such as these are worth getting hold of when so many varieties without a constitution are to be had. I find it strikes quite easily from cuttings, though, of course, the strongest plants are from layers. Germania also did very well, though much of the bloom was damaged by damp and rain. In a good season this will prove one of the best of Carnations. It also strikes at any time from cuttings, and a stock of plants can be quickly run up. I am growing several dozens for spring flowering. For the latter purpose one of the very best sorts is Comtesse de Paris. The flowers are very large, and of a silvery glistening tone of white. A very beautiful sort, a sort I had last year, named Mdme. John Benary, and which is also good for spring flowering, can be highly recommended. It belongs to the fancy yellow ground section, and is beautifully flaked with rose. Good blooms are nearly 4 inches across.

PENTSTEMONS.

During the past few years some remarkable varieties have been introduced. The spikes are long, the individual flowers very large, and the coloration most attractive. A dozen of the best are Screnade, Vesuvius, Gyp, A. Daudet, Mdme. Dieulafoy, Melinite, Derviche, Director Braumuller, Orphée, Turban, Olivier Pain, and Paul Bert.

A GOOD BEDDING CALCEOLARIA.

This I had last year without a name. It is dwarf habit, the dwarfest yellow sort I am acquainted with, and about 3 inches less tall than Golden Gem; the flowers three times the size of that variety, and of a peculiarly soft shade of lemon yellow. I consider it one of the greatest acquisitions among flowering bedding plants. It certainly was the finest throughout the season here, and I have seen it elsewhere equally noteworthy. It has, I believe, been named Lemon Queen.—B.

MR. RICHARD PARKER.

"PARKER OF IMPNEY" is an association of names which have been familiar to most visitors to Fruit and Chrysanthemum shows of late years, and to all readers of garden literature. When Mr. Parker first came to the front as an exhibitor of Chrysanthemums and the winner of

chief prizes in good competition, his success created a feeling of wonder as to whether he would be able to maintain the position he won. He has done so, one of his latest achievements being the winning of the greatest prize ever offered for Chrysanthemums, and this in one of the closest and keenest contests of the year—namely, the forty-eight bloom class at Birmingham. The achievement is the more noteworthy since it was the fourth consecutive year in which he won the chief prize in the great midland city, and always against first-class competitors. Also in three consecutive years he has won three cups at Sheffield, including the "National" for seventy-two blooms.

Perhaps that record of success alone entitles him to the distinction of being presented to our readers as in the annexed engraving from a photograph, though it is not the only claim, and he is not the less satisfied nor the less to be commended for receiving the chief prizes for collections of fruit in 1886 at the Royal Horticultural Society's Provincial Show at Liverpool, in 1887 at Regent's Park, in 1888 at the Crystal Palace, and in 1889 at both the last named Exhibitions, the former in June the latter in November.

Having been trained under Mr. J. Smith at Mentmore and Mr.



FIG. 66.—MR. R. PARKER.

J. McIndoe at Hutton Hall, where he was foreman for eight years, Mr. Parker's competency as a fruit grower is not surprising, but he certainly took the world by surprise in taking such a distinct lead with Chrysanthemums, and it is perhaps not generally known that the first portion of his gardening experience was gained under Mr. Adam Forsyth, the famous Chrysanthemum grower in the Brunswick Nurseries, Stoke Newington, and it will be conceded he has done credit to the teaching of his old master.

Born in 1856, Mr. Parker is still a comparatively young man, with, it is hoped, a long and successful career before him. Only a man of distinct ability in the different branches of gardening could have followed with credit such skilful men as Mr. M. Temple and Mr. C. Thomas at Impney. It is true he has advantages there that fall not to the lot of all able men, for the owner of Impney, J. Corbett, Esq., M.P., is both wealthy and generous, and provides the requisite means for the high maintenance of his beautiful home surroundings.

Mr. Parker is now engaged in carrying out a considerable extent of landscape gardening—terrace extension at Impney—from plans of Mr. W. Goldring, so that Chrysanthemum growing has only a share of attention amongst various other claims on his time. He values highly the assistance of his foreman, Mr. Charles Crooks, and speaks of him as a first-class man, waiting for a position in which he can display his skill

as an industrious all-round gardener. Thus it will be seen Mr. Parker is not above admitting his indebtedness to a good master and a good man for the success he has attained in the discharge of his duty.

PROBLEMS IN CHRYSANTHEMUM CULTURE.

[A Paper read by Mr. J. Wright at Hull, November 21st, 1889.]

WHILE exhibitions of Chrysanthemums have done more than all else besides to popularise the flower that brightens, as no other flower can brighten, the proverbially dull month of November, something more appears needed for rendering those exhibitions completely satisfactory to those who so laudably and so ably share in producing them. I know of nothing more gratifying nor encouraging than the efforts that are made in various parts of the kingdom by gentlemen who have *not* been trained as cultivators, devoting a portion of their time, and not a small portion either, in producing the floral gatherings which afford delight to thousands who inspect and admire them. This action on the part of those who engage in it is most praiseworthy, and the business capacity thereby brought to bear in the formation and management of Chrysanthemum societies cannot be over-estimated. The response that is made by men who *are* cultivators is also gratifying—creditable to themselves and generally appreciated. I am convinced that nowhere else in Europe are Chrysanthemums so well grown as in this country, yet we are not satisfied. There is an old adage which says, "Much wants more." It is true as applied to many engagements of life, and certainly in respect to the cultivation of a flower that so well repays for the skill that is exercised in its production. The aim is ever for excellence, and still greater excellence. In the endeavour to attain an ideal standard impediments are met with that can only be removed by a combination of effort, each doing what little he can in adding to the common store of knowledge; and we may hope that by the aggregation of ideas we shall be able to take a step in advance yearly, and feel that we are treading on firm ground, thereby not only maintaining the position we occupy as the foremost Chrysanthemum-growing kingdom in Europe, but making sure, as far as possible, that our well-won supremacy will be sustained.

Under the general heading of Problems I have been requested to refer to a few of the difficulties which amateurs encounter in the prosecution of the work they so zealously engage in, but in which they sometimes fail to achieve the object of their hopes. In complying with the wishes of some good friends and ardent cultivators I find a wide field before me. What is a problem? The dictionary says—and it ought to know—that it is "a question proposed; a proposition; any question involving doubt and uncertainty." Now it so happens that I am relieved of the necessity of choosing certain propositions of that nature for discussion, because a few have been submitted to me in writing. These are—1, Time and methods of raising plants; 2, Timing of blooms in respect to cut-back and topped plants; 3, Potting, watering, and feeding Chrysanthemums; 4, The cause of damping in blooms; 5, The origin of sports. As dealing exhaustively with each subject would require five papers instead of one, each proposition can only be briefly stated in a form that will incite discussion, and I shall ask the co-operation of all—expert cultivators, and earnest, thoughtful amateurs—in endeavouring to remove some of the difficulties indicated, or, in other words, solving the problems proposed.

RAISING PLANTS.

I am convinced that many amateurs err in establishing young plants too soon, or say in November. Where the best conveniences exist for growing the plants steadily and sturdily the objection to autumn propagation largely vanishes. It is essential for the formation of the finest specimen plants, but not for the production of handsome individual blooms, except in the case of a few late varieties which require a long period of growth. When amateurs whose glass structures are limited, and consequently usually crowded with various kinds of plants, establish many young Chrysanthemums early in the autumn, they are extremely liable to be either "drawn" or "checked" during the winter months. In the former case they are weak to begin with in spring; in the latter, apt to form buds prematurely, and just when they are not wanted. Drawing is the inevitable result of overcrowding, while checks occur through the plants remaining too long root-bound in small pots, because of the absence of room in the most suitable portions for shifting them at the proper time. Most amateurs would do better by a limitation in numbers of autumn raised plants, and deferring the propagation till the turn of the year, when every succeeding night is shorter and day grows

longer—conditions that are essentially favourable for steady, substantial growth.

If short, robust root cuttings or suckers are inserted in February or March, the leaves never allowed to flag, yet never needlessly shaded, and the young plants kept moving without check of any kind, and in the most suitable positions, throughout their whole career, the larger flowering varieties especially will produce blooms quite large enough, and what is more the buds will, in all probability, be several days later in appearing than on plants raised three months sooner, and thus the naturally early sorts that so often come too soon and are "lost" before the shows, might be kept for them. As years roll round we hear more and more regrets about losing the best blooms of the Queen family with the "Alfreds," the "Wolseleys," the Jeanne d'Arc's, and others which have such an imposing effect, and count so heavily when in clean and good condition in the stands. I suspect not a few of those losses are the outcome of over-anxiety in working for blooms of extraordinary dimensions by early autumn propagation, and the influence this exerts on premature bud formation; and it is the same in respect to the naturally early Japanese. If amateurs were more generally to establish the late blooming varieties only in the autumn, and assign them the best positions through the winter, they would make the best of their space, and by striking the early varieties later than is customary the blooming of the two sections would be more equalised; but by treating all alike from the outset, starting them all together in the race, a close finish or simultaneity of expansion cannot be expected. Cuttings inserted singly in thumb pots in January for the midseason varieties, and a few weeks later for the earlies, will make better plants than if the cuttings were struck several in a pot two months sooner, and the growth subsequently checked by the necessary separation and breakage of the roots.

In striking the cuttings needlessly high temperatures should be avoided. A close case in a comfortable greenhouse is usually warm enough, ranging as it does from about 50° to 55°. Every ray of light should be admitted that the leaves will endure without drooping, and eventually air, while adequate moisture must be afforded. Every day during which cuttings flag may be counted as two days lost in after growth, for there is the actual loss by growth cessation, *plus* the loss of energy from the cutting or plant. For this double reason half-starving cuttings to death in endeavouring to strike them on dry open stages, or in too cold positions, should be avoided, for the first plan means exhaustion, the second stagnation. Steady, healthy, progressive movement from the first day to the last is the object to strive for, coddling, chilling, and checking being errors to be avoided in the career of the plants; and just in proportion as the right and rational plan is adopted, and the wrong evaded, so will the result be—sound, healthy examples of culture, capable of developing substantial blooms.

TIMING BLOOMS WITH CUT-BACK PLANTS.

This is a difficult question to deal with, and that is probably the reason of its formulation. As may be gathered from the foregoing remarks, I am a greater believer in "timing" the blooms by the insertion of the cuttings than by cutting back the growths; that is, when the finest exhibition blooms are coveted. No doubt very handsome blooms are produced by certain cut-back plants, and these plants, by their low stature and rich leafage, are indispensable for grouping and various decorative purposes; but, as a rule, larger blooms of the same varieties are produced when cutting the plants down is not resorted to. We have to bear in mind the object in view in considering this question. If it is for retarding plants on which buds show too soon, then topping the shoots, instead of cutting back the stems, is probably the better plan to adopt. Presuming that the production of crown buds at the right time is the chief point, and the naturally "early openers" form their buds towards the end of June, or early in July, as many do, the blooms would expand too soon, whereas if they were allowed to run on naturally to the next bud, this might be too late. It would be wise, therefore, not to wait till an early July bud actually forms, but take off the top of the shoot before the bud is visible, then the bud next following would come nearer the right time. When bud formation commences, growths push from the axils of the leaves below—the natural result of the cessation of extension of the main stem. To these the stem may be cut, taking up two or three for bearing the coveted blooms. If no bud forms early in July it is a good plan to top the plants. This is doing what the bud does—arresting extension, and accelerating the growth of bloom-bearing shoots or breaks, which, but for this aid, might come too late.

Some varieties, which are habitually too late, are found to come earlier by topping about the middle of May, taking up three shoots

and securing the crown bud when it forms. For the Queen family, and others that come about the same time, if dwarfing is desired, the end of May is a suitable time for shortening the stems, while the earlier sorts, such as the Beverleys, and others that expand about the same period, are put back by topping about the end of the first week in June. This is the result of experiments in the Midland counties, with an advance of a week added to render the periods indicated appropriate for the Hull district. It has been found that the Princess of Wales family, Prince Alfred, Lord Wolseley, John Salter, Refulgens, Jeanne d'Arc, St. Patrick, Mrs. J. Wright, Sarah Owen, Mrs. John Laing, Jeanne Délaux, E. Molyneux, and a few others, deteriorated after being topped in the blooms coming too small. It will be prudent for amateurs to proceed experimentally in this work, and in the first attempt to found their action on the appearance of the shoots at the end of June or early in July, proceeding as above indicated.

It may be mentioned that stout short-jointed cuttings of such varieties as Val d'Andorre, Avalanche, Elaine, Ed. Audiguer, Etoile de Lyon, and, indeed, several others, rooted between April and July the plants confined to one stem and one bloom from the crown bud are excellent for grouping purposes, the plants being flowered in 6-inch pots, and clothed with handsome foliage down to the soil. The cutting must not flag in the least during the process of rooting, nor the plants droop afterwards through omissions in watering, or they will be deprived of much of their beauty.

Anemone flowered varieties, except Lady Margaret and its sport, perhaps, Empress, afford the best quality blooms from terminal buds, and would consequently not be improved by either the cutting down or topping process. The very inexperienced may be informed that terminal buds always have other flower buds round them, crown buds never; but growths when permitted, as they should be in the section under notice, extend beyond these, terminating in a cluster of buds, the one at the apex being secured for the bloom, the others removed.

For practical purposes it may be said that crown buds must be chosen for developing the finest blooms in other than the Anemone section, and most of them should be set by the second week in August, a few of the slow openers a little earlier in the north-eastern counties, the quick expanders at the end of the month or the early days of September. As seasons influence the blooms, all the buds of the same varieties should not be "taken," as it is called (but "secured" is a more exact term) on the same dates, a little divergence being highly desirable in view of contingencies, as no one knows whether the Chrysanthemum season will be early, medium or late—two or three months in advance. Usually from three to four weeks elapse between the presentation of colour and the development of blooms, but varieties differ in that respect. I must close my remarks on the difficult phase of Chrysanthemum culture under notice, and leave others to make good what I have omitted on timing blooms by pruning or topping plants.

(To be continued.)



THE NATIONAL ROSE SOCIETY.

THE proceedings of the above Society at the annual meeting invariably induce a good number of members to attend, and so amongst those assembled on Wednesday, December 4th, in the Hotel Windsor, Victoria Street, I found myself, with some friends, a patient listener and on-looker. It is always surprising to witness the smoothness with which the business at these gatherings is disposed of. Where there is so little opposition or discussion it indicates either the pronounced ability of the Committee and officers, or considerable apathy on the part of the members. The former must be regarded as the case at the Rose Society's meetings, for though the members possess a preponderance of dignified solemnity, yet they cannot be regarded as apathetic. We must, therefore, take it the Hon. Secretaries so carefully consider all matters, and make such well devised arrangements, that the would-be critics, if any exist, are silenced. Still this meeting was not altogether devoid of several mildly exciting episodes, not the least being the erratic behaviour of the electric light intended to illuminate the apartment, but which did so in an extremely fitful manner, and finally left the assembly in complete darkness. This may have had a depressing effect upon the eloquence of the orators who had to propose the various resolutions, at any rate they nearly all confined themselves strictly to the letter of their texts. There was one exception to this rule, however, in the person of a reverend gentleman who proposed a resolution condemning "dressing Roses." He portrayed some of the

effects arising from this evil practice, and concluded with the astounding statement that some Roses had been seen so much altered in character by dressing that "they could not be recognised from Chrysanthemums or any other low flowers." This remark was greeted with a roar of laughter, in which some admirers of the "humble" Chrysanthemums ventured to join. But this burst of unwonted hilarity was followed by an almost painful silence, as if something was needed to restore the dignity of the assembly.

Another episode, however, gave a little life to the proceedings, for a well-known Colchester member arose to proclaim his disapproval of the Society's intention to offer prizes for Tea Roses at one of the Royal Horticultural Society's meetings. It is always a pleasure to see this gentleman assert his independent views, as he does invariably at these meetings, and it is fortunate for the Society that they possess a member who has the courage to express his opinions in opposition to such an array of skilled disputants. Although not entirely in accord with his views on this occasion, it must be admitted that his remarks cleared up some difficulties, and brought from a high official of the Royal Horticultural Society an assurance that members of the Rose Society would be admitted on presentation of their ticket. Our Colchester friend practically gained his point, and it was stated that the prizes would be open to amateur members of the two Societies.

Little else transpired to call for notice, but in the election of members of the Committee it was stated that one gentleman could not attend, and had sent his friend as representative to take his place. This induced a question from a famed rosarian as to whether it was desirable that two members of one firm should be on the Committee. The substituted candidate, however, volunteered an explanation, and he was subsequently elected. Whether this is a satisfactory mode of filling up vacancies in a Committee is open to doubt; it certainly would not be accepted by the members of some societies.

After the termination of the business certain of the members of a convivial turn remained to dine together, and I hear from a friend who was present that all retired at a comparatively early hour, much refreshed both by the viands and friendly comparison of notes, hopes, and prospects for the next Rose season.—A. K. B.

THE annual general meeting of the above Society took place in the Hotel Windsor on December 4th at 3.30 P.M., T. B. Haywood, Esq., in the chair, and the following members were present—The Hon. Secs., the H. H. D'Ombraun and Mr. E. Mawley, with the Rev. W. Wilks, H. A. Berners, F. R. Burnside, Alan Cheales, H. B. Biron, T. N. Flintoff, F. H. Gall, Capt. Christy, and Dr. Masters, with Messrs. H. Appleby, W. Rumsey, W. F. Cooling, H. W. Williams, G. Ramsey, C. E. Cant, G. Prince, G. Paul, J. Bateman, C. F. Barker, B. R. Cant, R. Bloxam, C. F. King, H. Wallis, F. Burrell, H. Turner, R. E. West, C. F. Hore, H. J. Pearson, T. W. Piper, F. Cant, and H. B. Lindsell.

After the transaction of the usual formal business the Rev. H. H. D'Ombraun read the following report, and the financial statement was submitted by the Treasurer, Mr. T. B. Haywood.

REPORT OF THE COMMITTEE FOR THE YEAR 1889.

THE Committee have once more the pleasure of reporting upon the Society's operations during the past year. The circumstances under which the Metropolitan Exhibition was held at the Crystal Palace were peculiarly unfortunate. Her Royal Highness the Princess of Wales had signified to the Secretaries her intention of visiting the Show early in the day. The Shah, however, having afterwards expressed a wish to be also present, and not being able to attend until the evening, this idea had to be abandoned; while the necessity of keeping the building clear for the Royal party compelled the Directors of the Crystal Palace to hold the Exhibition in a tent, to the great detriment of the Roses, and the great inconvenience of both exhibitors and visitors. The Committee can only hope that their Royal Patroness may on another occasion see their Exhibition at an earlier hour, and under more favourable conditions, and that it may never again be crowded into so limited a space. While referring to this visit of the Princess of Wales, they can but express their deep regret at the loss the Society has sustained in the death of their Vice-President, the Hon. and Rev. J. T. Boscawen, for it was mainly through his exertions and zeal that the patronage of Her Royal Highness was obtained. The Provincial Show at Sheffield proved less extensive than any held by the Society in recent years. This, however, was entirely owing to the earliness of the season, the first flowering being then almost over in many parts of England, and the unfavourable character of the weather immediately preceding the Show day.

The National Rose Conference held at Chiswick in conjunction with the Royal Horticultural Society early in July was undoubtedly the most noteworthy event of the year. It is only to be regretted that the attendance of visitors was not larger, for the exhibition held in connection with this Conference was one of special interest. Indeed, it may be many years before so unique and representative a collection of Roses and Rose species is again got together. The papers read, and the discussions thereon, were also both interesting and valuable. The Committee have made arrangements with the Council of the Royal Horticultural Society, by which every member will receive a copy of the report, containing not only the papers read at the Conference, but also valuable information respecting Roses and Rose growing, the result of returns sent in by the principal rosarians throughout the kingdom in reply to inquiries issued by the Conference Committee.

The Committee have had recently under consideration the growing practice of "dressing" Rose blooms at exhibitions. This they cannot but regard as prejudicial to the best interests of the Rose, and as likely,

if generally adopted, to bring discredit on Rose showing. They accordingly suggest that the attention of judges and exhibitors should in future be directed to the new regulation having reference to this objectionable practice.

They have again to mention the clashing of the shows of some of the affiliated Societies. There are, of course, considerable difficulties to be overcome, as so many local causes interfere, and particular days are in some cases absolutely necessary. Nevertheless, the Committee will again do all in their power to bring about as satisfactory an arrangement between the different Societies as these local considerations will allow.

Early in the year the authorised rules for judging at Rose shows were revised throughout by the Executive Committee, and afterwards printed in the Annual Report.

FINANCIAL STATEMENT.—The Treasurer is again enabled to report favourably upon the Society's financial position. The amount in hand at the beginning of the year was £41 2s., and now at its close there remains £84 5s. 3d. to carry forward to the next account.

ARRANGEMENTS FOR 1890.—The Committee has again arranged with the Directors of the Crystal Palace to hold the Metropolitan Show there on the first Saturday in July, the 5th. The Provincial or Northern Show will take place at Birmingham on Thursday, July 17th, under the auspices of the Birmingham Botanical and Horticultural Society, in their Gardens at Edgbaston. The last exhibition held there by the Society was in 1886, when over 3000 Roses were staged in competition.

As many of the finest blooms of the Tea Roses are often over before the Metropolitan Exhibition is held, it is proposed, if possible, to offer a few prizes for Teas and Noisettes at one of the Royal Horticultural Society's meetings towards the end of June.

The supplement to the catalogue of exhibition and garden Roses being now out of print, a special committee has been appointed to prepare a new supplement, which will be issued to members during the ensuing year.

MEMBERS' PRIVILEGES.—Subscribers of £1 will, as usual, be entitled to two private view tickets to the Society's exhibitions, and four transferable tickets admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. New Members will each receive a copy of the Society's Illustrated Catalogue of Exhibition and Garden Roses, together with one of the new Supplement; also a copy of the Report of the National Rose Conference held at Chiswick during the past summer.

Again the Committee has to record the good work done by their local Secretaries, and especially by one of their number, Mr. T. W. Girdlestone, who has recently secured for the Society a large number of new and influential members. It is scarcely necessary here to remind our local Secretaries how much the welfare of the Society is dependent upon their exertions.

BALANCE SHEET, YEAR ENDING 30TH NOVEMBER 18 9.

RECEIPTS.									
December 1st, 1888.									
Balance at Bankers	..	..	..	..	..	..	..	..	£ 41 2 0
Subscriptions	..	..	..	..	..	..	..	..	345 8 0
Donations	..	..	..	..	..	..	..	..	5 0 0
Affiliation Fees and for Medals from Affiliated Societies	..	..	..	..	..	..	..	..	71 9 2
From Crystal Palace Company	..	..	..	..	..	..	..	..	165 0 0
" Sheffield	..	..	..	..	..	..	..	..	66 17 2
For Prizes	..	..	..	..	..	..	..	..	18 1 4
Catalogues Sold	..	..	..	..	..	..	..	..	0 9 1
									£653 6 9
EXPENDITURE.									
December 1st, 1889.									
Balance	..	..	..	..	..	..	..	..	£84 5 3
Printing, Stationery, and Advertising	..	..	..	..	..	..	..	..	38 8 6
Postage, Telegrams, and Sundry Expenses	..	..	..	..	..	..	..	..	26 8 0
Secretary's Travelling Expenses to Arrange Shows	..	..	..	..	..	..	..	..	7 15 6
Expenses Crystal Palace Show	..	..	..	..	..	..	..	..	8 6 6
" Sheffield	..	..	..	..	..	..	..	..	6 14 0
Medals	..	..	..	..	..	..	..	..	6 18 4
" for Provincial Societies	..	..	..	..	..	..	..	..	58 6 8
Prizes Crystal Palace Show	..	..	..	..	..	..	..	..	276 4 0
" Sheffield	..	..	..	..	..	..	..	..	120 0 0
Assistant Secretary and Accountant	..	..	..	..	..	..	..	..	20 0 0
Balance at Bankers	..	..	..	..	..	..	..	..	84 5 3
									£753 6 9

THOS. BURT HAYWOOD, *Hon. Treasurer.*
FRAS. WOLLASTON, *{ Auditors.*
J. D. PAWLE, *{*

The appended resolutions were submitted to the meeting and adopted.

- 1.—That the words "Half the members of this Committee to retire each year according to seniority, but to be eligible for re-election," be omitted from bye-law 6.
- 2.—That the first part of bye-law 7 be altered to read as follows:—"That the General Committee meet three times annually—in January to elect the Executive Committee; in March to consider the schedules for the year; and in November to make arrangements for the general meeting of the Society."
- 3.—That the following words be added to regulation 8: "Dressing Roses so as to alter their character is also prohibited. Also the insertion of any additional foliage."

The following officers and Committee for 1890 were also declared duly elected:—President, the Very Rev. the Dean of Rochester, D.D.; Vice-Presidents, His Grace the Duke of Portland, Right Hon. Joseph Chamberlain, M.P., Rev. J. M. Fuller, Robert Hogg, LL.D., James McIntosh, the Mayor of Birmingham; Hon. Treasurer, Thomas Burt Haywood; Hon. Secretaries, Rev. H. Honeywood D'Ombrian, Edward Mawley. General Committee: H. Appleby, R. N. G. Baker, J. Bateman, Rev. H. A. Berners, R. Bloxam, G. Bunyard, G. Burch, Rev. F. R.

Burnside, J. Burrell, B. R. Cant, F. Cant, Rev. A. Cheales, Captain Christy, W. F. Cooling, C. F. Barker, Rev. A. Foster-Melliar, W. H. Fowler, Rev. F. H. Gall, T. W. Girdlestone, W. J. Grant, R. Harkness, C. F. Hore, W. J. Jefferies, E. B. Lindsell, G. A. Marshall, M. T. Masters, F.R.S., G. Mount, Rev. F. Page-Roberts, G. Paul, J. D. Pawle, Rev. J. H. Pemberton, A. Prince, W. Rumsey, A. Slaughter, A. Turner, R. E. West, E. Wilkins, Rev. W. Wilks, W. H. Williams, and F. T. Wollaston. Hon. Auditors, J. D. Pawle and F. T. Wollaston.

The meeting terminated with the usual votes of thanks to the Chairman for presiding, to the Horticultural Club for the use of the rooms, and to the Committee and officers for their services during the year.

AMONGST THE ROSES.

THE weather during the first fortnight of November was well suited for garden work. It was taken advantage of by lifting all my dwarf Roses, a small collection forming the flower garden underneath the sitting room windows. The Rose trees occupying the beds, which at the first were composed of light, stony, unfavourable subsoil, were supplied at the top from time to time with dressings of virgin loam, good decomposed stable manure, and by these means, together with watching against insects and mildew, and copious syringings, and when necessary thorough waterings, my Roses have been generally satisfactory. At length the beds became too much above level of the grass, and the roots suffered accordingly drought.

Tempted by the mild still weather I resolved to renovate the beds, so after fresh labelling the Roses (about 120) and lightly laying them in where the roots might be protected from drying, or from frost, I had the soil dug out, using the upper surface as a top-dressing for herbaceous and other borders, and getting rid of all light and worthless soil. The bed thus emptied was replaced with a mixture of two-thirds of fresh loam and one-third spent cow manure well mixed. In these the Rose trees were replaced, with a surface dressing of manure and a sprinkling of ashes and soil over all.

Some weakly and unpromising or worn-out trees were eliminated and replaced by newer or more robust varieties. Delightful it is to the heart of a Rose lover to know he can count on some new blooms in the coming season. I am looking forward to Mrs. John Laing, Gloire de Margottin, Gloire de Lyonnaise, The Puritan, Earl of Dufferin, &c. Having small space one has to wait until there is a vacancy. I ought to say that I have brought all the Teas together by themselves instead of having them scattered about amongst the others, and I expect good results from the enjoyable occupation. I should have been unequal to this work myself, but I honestly shared in it, and am most grateful to the strong kind hands which really did the laborious part of it for me.

We have been engaged during suitable weather in laying out a new tennis court. It will be bordered on two sides by fruit trees. Some have been in the ground several years, and the Apple trees, Bramley's Seedling and Pearmain Mannington, bear well; the Pear trees take longer to fruit. Since the springs are more uncertain than ever, and the climate generally of a lower temperature, it is surely important to follow the advice given by local growers, who must know both soils and seasons, and plant only trees of robust fruit-bearing constitutions. Besides Irish Peach, which may at some future time furnish refreshment to the tennis players, Cox's Orange Pippin would come in too late. Then I mean to try Duchess of Oldenburgh, Lincoln Holland Pippin, and one or two kindred varieties. Some Crab trees would also be very ornamental. In short, dwarf fruit trees might often take the place of ornamental shrubs; equally, perhaps more, beautiful and more profitable.—A. M. B.

[We trust our correspondent will never lack the aid of "strong kind hands" to aid her in the work she loves.]

PROFITABLE FRUIT CULTURE.

WE have received a number of letters in reference to Mr. J. Wright's essay on the above subject, but some are too lengthy to be published in their entirety; in abridging them nothing in opposition to the teaching of the author has been eliminated.

MANY thanks for the very handsome and excellent essay on fruit growing. The more I examine it the better I like it.—A. F. BARRON, *Chiswick.*

I HAVE had a run through Mr. Wright's essay on fruit culture, and am very much pleased with it. It is a sound "multum in parvo," and cannot fail to be useful to all who may master its contents and have an opportunity of acting on them.—D. THOMSON, *Drumlanrig.*

I HAVE read Mr. Wright's prize essay, and truthfully assert that I have never before seen a subject treated in such a brief yet thoroughly instructive manner. The work is turned out in first-class style, and gardeners generally ought to possess a copy, for they will find nothing nearly so plain, reliable, and instructive in any other work of the kind. An extract from a financial paper is, I consider, misleading, as the prices of fruit named cannot be sustained. Those given by the author are nearer the mark, and I cannot pick holes in his own work.—W. IGGULDEN, *Marston.*

THE treatise on profitable fruit growing, although so concise, really contains all that is necessary, and if the advice in it be followed

it will justify the title. Being naturally rather critical, I thought it possible I might find in it something with which I might not agree, but as to treatment I have found nothing, and the only exception I can take is with reference to some of the lists of varieties to be cultivated, but even there I may be wrong, as the advice is addressed to small cultivators. My experience would not justify me in leaving out of a list of twelve Pears Comte de Lamy. It is a constant bearer, never varies in quality, which is that of the very highest kind. Comte de Flandres, Van Mons Leon le Clerc, and Zephirin Grégoire are superior to some named in the work. As to Plums, Jefferson is for all qualities, size, flavour, appearance, and free bearing, superior to any other. It makes the most delicious preserve, more delicate than Apricot. However, fruits vary in different localities, and my experience may be exceptional.—EDMUND TONKS.

I HAVE carefully read the prize-essay of Mr. J. Wright. It is full of detail, and contains more reliable information on fruit growing than has perhaps ever appeared in the same space before. Not only does the author say and illustrate what to do, but also what not to do. The illustrations convey the right and wrong methods of doing things in a small space and simple manner. On page 26, for instance, fig. 5 displays at a glance, without reading, how to plant Strawberries and how not to plant them. The method of planting, tying, and pruning Raspberries is also represented in the same excellent manner. Good methods of planting and pruning, and the reverse, are also instructively figured on pages 76 and 77. The work is written to aid cottagers and other small holders of land to grow fruit, and is just what is needed by them. But it should also be in the hands of every gardener. Young men especially should read it attentively, and they may learn more about hardy fruit growing than they frequently do after several years of ordinary practice in gardens. I regret that such a good and cheap little book was not in my hands twenty years ago. It would have saved me many blunders and mistakes since then.—WM. BARDNEY, *Norris Green*.

BOTH Mr. Wright and the Worshipful Company of Fruiterers must be congratulated on placing before the public such a wonderfully cheap and practical essay. Good fruit always pays, and if growers get a third of what is stated they may be satisfied. Living as I do in a fruit-producing county, I know the difficulties small growers have to contend with in disposing of what is termed soft fruit in small quantities, and jam factories or agencies for buying up fruit, such as are now being established at Pershore and a few other places, are very advantageous. There are capital selections of the various fruits to be grown, and they are equally profitable for growing in gentlemen's gardens. Plain and concise instructions are given on the different modes of culture. Mr. Wright commences his essay with the smaller fruits, such as Strawberries, Red and Black Currants, Raspberries, and Gooseberries, and then follows on with Apples, Pears, Plums, and Cherries. There are also chapters on manuring, grafting, thinning, gathering, storing, and marketing fruit. The Apples named are good, but how far the Broad-leaved Paradise stock will be suitable for bush trees on the majority of soils and districts remains to be proved. On strong soils I have found that the Ecklinville Seedling, Stirling Castle, Small's Admirable, Domino, and Keswick Codlin, are equally fruitful, and do not make over-luxuriant growth on the Crab stock. The illustrations, as to form of trees, planting, pruning, packing the fruit, with plans of gardens, are useful, and altogether we have a capital shillingsworth.—A. YOUNG, *Abberley Hall Gardens, Stourport*.

I SINCERELY hope my Irish countrymen will read well and inwardly digest the handbook on profitable fruit culture by Mr. J. Wright, issued by the publisher of the *Journal of Horticulture*, and which perforce places within the most convenient brief limits the most practical information on this increasingly important subject. In my rambles through this singularly favoured island—I mean by Nature and climate—I have often noticed one, two, three, or more acres of orchard attached to the farm houses here and there, but especially in Munster, and I regret to say in every instance those orchards are sadly neglected. Anything like root-pruning, winter dressing, removal of moss, dead branches, or top-dressings seems never to have been thought of. Generally those orchards are let every year at some small sum, barely sufficient in some cases to pay the rent and taxes. They are invariably Apple orchards—indeed, I never met a Pear, Plum, Cherry, or Damson preserve—and seem to be the remains of the old cider industry that existed beside the Suir and Blackwater and other favoured localities in the past century. In this locality I remember seeing two old cider presses a quarter of a century since beside the public road, where Apples were regularly purchased as they passed in carloads into town to make that wholesome and exhilarating drink. As to climate, I doubt if any part of England except the counties bordering the Channel has as mild or salubrious a climate for fruit culture. To-day (6th December), for instance, the open air temperature is 50° here, and I see telegrams notifying you have had six days smart frost around London and 10 feet of snow on the Continent in a more southerly latitude. The soil and climate of Munster cannot be excelled in the British Isles. Information is necessary, and a little more. That information, and that little more, Mr. Wright tells succinctly and in such a way that it would be impossible to do justice to it by summarising.

The book should be in the hands of every farmer—they are the

great middle class—every shop-keeper having a garden, and every owner of a villa and suburban residence where they can grow fruit. I can hardly suggest cottiers, as the great mass of them, unlike the same class in Great Britain, are only slowly emerging from poverty, and think it a good thing to have common food the year round. Since I read Mr. Wright's book I have been thinking how this valuable manual could be placed within the reach of the rising generation, and have come to the conclusion that the Board of National Education should be requested to place it on their list, so as to make it accessible to their teachers and the higher classes in the schools. This might be followed up by allowing some small result fees to advanced boys who answered best on the general subject. The rising generation must be looked to—the past are hopeless, and the present have different aims and objects that I cannot further refer to.

I think, too, the Commissioners of National Education when ordering their inspectors to report on teachers' school farms and gardens, should add some gratuity for those who grow fruit best. If the teacher understood and grew fruit, and gave an occasional lesson to his higher classes, using his own garden as an illustration, this would give a much-needed stimulus to fruit culture all over Ireland. One hundred pounds a year would do this—would pay the premiums and result fees. If we have a paternal government why not have a commencement made at once? Mr. Wright could readily append questions to the several chapters, to facilitate its use as a text book, if my suggestion, which I know to be practicable, were adopted.—W. J. MURPHY, *Clonmel*.

WHAT a capital manual the "Profitable Fruit Growing" is! The only thing to which I take exception is Adam's right leg, which is certainly out of drawing, and that I suppose is the fault of the Worshipful Company of Fruiterers.—EDWARD LUCKHURST.

[We wonder what grounds our correspondent has for questioning the accuracy of the anatomical drawing of the ancient limb by the "ancient" Company referred to for their heraldic device.]

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 10TH.

THE last Committee meeting of the year is never expected to be largely attended by exhibitors, but the members of the several Committees usually assemble in good numbers to join in mutual good wishes for the coming year, and hearty votes of thanks to their respective Chairmen. The exhibits were not abundant at the Drill Hall, Westminster, on Tuesday last, and the central tables which have been required at every previous meeting were dispensed with, the side tables sufficing. Yet several interesting exhibits were contributed, and more certificates were awarded, especially amongst the Orchids, than at some gatherings when the exhibits have been more numerous.

FRUIT COMMITTEE.—Present: Sir C. W. Strickland, Bart., in the chair, and Messrs. P. Crawley, C. Ross, Harrison Weir, R. D. Blackmore, W. Bates, G. W. Cummins, G. Cliffe, W. Dominy, W. Wildsmith, G. T. Miles, W. Warren, G. Bunyard, J. T. Saltmarsh, A. H. Pearson, J. Willard, J. Smith, G. Wythes, J. Hudson, H. Balderson, F. Q. Lanc, G. Norman, Sidney Ford, and J. Wright.

Some Apples that had previously been before the Committee from Messrs. W. & J. Brown, Stamford, were again presented. Toogood's Seedling was considered too much like Golden Noble. Duncombe's Seedling and South Lincoln Beauty were not considered to possess qualities entitling them to any special award. A dish of very fine Apples bearing a general resemblance to Bramley's Seedling, yet sweeter, was sent from the gardens of A. H. Smee, Esq., and was considered worthy of further investigation. Mr. R. Doe, gardener to Lord Savill, Rufford, sent a dish of a seedling Apple, Beauty of Stoke, like a conical Blenheim Pippin, large, firm, and a variety of promise; considered worthy of further investigation. Mr. Ross, Welford, sent a dish of a seedling Apple, clear yellow in colour, remarkable in that respect as being a seedling from the Scarlet Nonpareil. It is above medium size, somewhat conical, tender, and of good flavour. It is named Atalanta, and met with much approval, and more information is wanted on its cropping quality. Mr. Ross also sent a very fine fruit of Smooth Cayenne Pine Apple, for which a cultural commendation was unanimously awarded.

The Rev. W. W. Wilks, Shirley, sent fruits of the "Tree Tomato" *Cyphomandra betacea*. They were acutely egg-shaped, 3 inches long and 1½ inch in diameter in the widest part, dark salmon in colour, firm, sprightly and agreeable, and possessing a brisk Tomato flavour. A cultural commendation was unanimously awarded, accompanied with a request that plants be grown at Chiswick. Mr. Wilks sent the following description of the plant with his exhibit:—

"TREE TOMATO.—The 'tree' on which the fruits shown have been grown is about 9 feet high, with a spreading much-branched head. The leaves when young are of a violet purple colour, changing with growth into a deep green. They are very large when fully developed. The blossom is precisely like a *Solanum*, being, in fact, to an ordinary observer, identical with that of the plant commonly known as 'Black' or 'Woody Nightshade.' It is an abundant bearer, the fruit ripening late in November and throughout December and January. The fruit when raw has a much firmer flesh than a Tomato, and is slightly more acid, but when cooked it is almost indistinguishable from the ordinary

Tomato. The plant has been grown throughout in a cool orchard house, from which only frost is excluded."

Mr. Miller, gardener, Ruxley Lodge, Esher, sent a basket of good Mushrooms from outdoor beds, and a vote of thanks was accorded. Mr. A. Harding sent from Orton Hall examples of very fine Brussels Sprouts, for which a cultural commendation was granted, and a recommendation that the variety be grown at Chiswick. Mr. H. J. Goodacre, Elvaston, sent a dish of excellent and well coloured fruits of the Ham Green Favourite Tomato, also good bunches of Lady Downe's Grape, and cultural commendations were unanimously granted for both exhibits.

A box of Coate's anti-incrustator was placed on the table by Mr. G. W. Cummins. It is a composition for mixing in water and placing in boilers for dissolving the fur with which they or the pipes may be encrusted. This, Mr. Cummins stated, it does in a week. The Committee had obviously no means of testing this mixture, and it was stated other articles were in the market for accomplishing the same purpose, and subsequently a gentleman remarked he could dissolve the fur in twenty-four hours.

The "Stott" manure and insecticide distributor was exhibited. It consists of a cylinder with cells for holding any kind of manure or insecticide that dissolves readily, the water being forced through the cylinder by hose attached to a water main or pump, and the solution is thus distributed by the pressure applied. Persons who have tried the "Stott" speak well of it, and it will in all probability be put to the test at Chiswick during the insect time.

This being the last meeting of the year a vote of thanks was proposed by Mr. Bunyard, and seconded by Mr. Harrison Weir, to the gentlemen who had presided at the meetings during the season, and acknowledged by Sir Charles Strickland.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, and Messrs. Harry Turner, Lewis Castle, H. Herbst, J. Walker, H. C. Leach, R. B. Lowe, C. Noble, J. Fraser, B. Wynne, W. Holmes, and F. Ross.

Sir Trevor Lawrence, Bart., M.P. Burford Lodge, Dorking, showed *Anthurium borfordiense*, a handsome seedling with rich scarlet spathes hard and rounded. Messrs. C. Lee & Son, Hammersmith, sent plants of *Bouvardia elegans variegata*, a sport from *B. elegans*, with scarlet flowers and leaves distinctly edged with white. Messrs. J. Veitch & Sons, Chelsea, exhibited a box of *Rhododendron* blooms of the javanicum hybrids, and it was stated that they were gathered from plants which had been flowering continuously since midsummer. Some members of the Committee also incidentally remarked, as proving the value of these *Rhododendrons* for long flowering, that few meetings for some years past had been without examples of these beautiful varieties and hybrids (vote of thanks). Two Carnations were also shown, one receiving an award of merit, the other, named Marie Louise, having fringed flowers, white tipped with purple. Several Orchids were shown and received various recognitions.

Messrs. H. Cannell & Sons, Swanley, had one of the brightest contributions to the meeting, a stand of dazzling Zonal Pelargoniums so useful for winter flowering. A purplish crimson Japanese Chrysanthemum of the incurved type, and said to be sweet scented, was also staged, together with a large single variety named Crimson and Gold, its title indicating the colouring. Mr. T. S. Ware, Tottenham, sent six pans of *Narcissus monophyllus*, having numerous white bell-shaped flowers. Mr. G. Masters, High Legh, Knutsford, showed an *Adiantum* named *inbricatum*, something in the style of *A. farleyense*, but with the pinnules deeply cut. Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, showed two boxes of fine *Eucharis* flowers (vote of thanks).

ORCHID COMMITTEE.—Present: Sir Trevor Lawrence, Bart., M.P., in the chair, and Messrs. J. O'Brien, F. Moore, J. Douglas, E. Hill, H. M. Pollett, C. Pilcher, H. Ballantine, H. J. Veitch, and Dr. M. T. Masters.

Mr. C. J. Catt, gardener to J. Charlton, Parr, Esq., Grappenhall, Heyes, Warrington, sent a seedling *Cypripedium*, which the Committee decided to be *C. lecanum*; also a fine variety of *C. bellatulum*, with a large deeply coloured flower. C. Ingram, Esq., Godalming, exhibited a plant of *Cypripedium Lathamianum*, of which we gave an illustration on page 175 in February of the present year. It is the result of a cross between *villosum* and *Spicerianum*, and partakes largely of the latter's characters (vote of thanks). Mr. Hill, gardener, to Lord Rothschild, Tring Park, exhibited a well grown plant of *Vanda Amesiana*, having a panicle 2 feet high and bearing twenty-three flowers (cultural commendation). Messrs. Sander & Co., St. Albans, had a basket of Orchids, comprising some very interesting plants, *Odontoglossum Wattianum*, *Cattleya O'Brieniana*, *Dendrobium bigibbum*, and its near relative *D. Slatterianum*, with several *Sophranitis* were capitally represented. J. G. Hodgson, Esq., Lythe Hill, Haslemere, was awarded a bronze Banksian medal for a plant of *Masdevallia towarensis*, having 162 spikes, 346 flowers, and 255 leaves, a surprisingly vigorous example of this useful Orchid. A well flowered specimen of the peculiar *Lælia bella* secured a cultural commendation for Mr. Cullimore, Kingston, the flowers clustered close to the pseudo-bulbs having white purple-tipped sepals, white petals, and a yellow lip. A vote of thanks also recognised the merit in a large variety of *Oncidium Forbesi* from E. O. Wrigley, Esq., Dukenfield, Cheshunt.

FIRST-CLASS CERTIFICATES.

Lælia-Cattleya Pallas (J. Veitch & Sons).—A hybrid between *Cattleya Dowiana* and *Lælia crispa*, with rather small sepals and petals

of a soft bluish tint, the lip broad, intense crimson, with a few gold veins in the throat, and undulated at the margin.

Cypripedium Niobe (J. Veitch & Sons).—A hybrid between *C. Fairrieianum* and *C. Spicerianum*, very interesting and distinct, showing at a glance the influence of the two parents. The dorsal sepal is much like that of *C. Spicerianum*, but somewhat more green at the base, veined with deep purple. The petals are undulated at the margin and strongly recurved, just like *C. Fairrieianum*, green, and a peculiar reddish brown tint. The lip is small, neat, and of a greenish hue.

AWARDS OF MERIT.

Cypripedium T. B. Haywood (Veitch & Sons).—A hybrid between *C. Drurii* and *C. superbiens*, illustrated on page 510 of the present issue of this Journal.

Cypripedium Galatea major (Baron Schröder).—A cross between *C. Chantini* and *C. Harrisianum*, the flowers large, the dorsal sepal edged with white, the centre heavily spotted with deep crimson, the lower sepals pale green with a few spots. The petals are purple, tinted and tipped with green, the lip having a purplish hue and polished surface.

Chrysanthemum Mrs. Alpheus Hardy (Pitcher and Manda).—A Japanese variety now well known to most persons interested in Chrysanthemums.

Carnation Winter Cheer (J. Veitch & Sons).—A dwarf, free-flowering variety, with scarlet flowers, likely to be useful for cutting and decorative purposes.

THE Council of the Royal Horticultural Society have lately had before them the very difficult work which always has to be done at a year's end—viz., determining on the names of three members of Council whom they will recommend (according to the provisions of the charter and bye-laws) for retirement in the ensuing year. The retiring members are not eligible for re-election, and when all have laboured so hard for the Society it is very difficult to say whose absence will be least detrimental. The same unenviable work occurs in the appointment of the several Committees, who have done such good and excellent work in the past year; for though in this case the retiring members are eligible for reappointment, the Council is of opinion that, as in their own body, so also in the Committees, a small infusion of new blood every year when it can be obtained is desirable, and there is probably no member of any Committee who would not be thankful for a year's rest from labour.

A vote has been taken on the question of changing the hour of the Fruit, Floral, and Orchid Committees from 11 A.M. to 12 noon, and in compliance with the wish of an overwhelming majority of the present members, the Council have determined to adopt the later hour for next year.

The following plan of arrangements, meetings, lectures, &c., has been drawn up and adopted. Other gentlemen besides those named have been invited to contribute papers, but it would hardly be courteous to mention their names until they shall have signified their consent. The meetings, &c., will be held in the Drill Hall unless otherwise stated:—

- Jan. 14th.—"A Method of Winter Gardening," Rev. W. Wilks.
- Feb. 11.—Annual General Meeting at 117, Victoria Street.
- March 11th.—"Hippeastrums" (*Amaryllis*), Mr. Harry Veitch, F.L.S., and Mr. James Douglas.
- March 25th.—"Saladings," Mons. Henry de Vilmorin.
- April 8th.—"Spring Flower Gardening," Mr. W. Ingram.
- April 15th, 16th, 17th, 18th.—Daffodil Exhibition and Conference at Chiswick. Readers of Papers: Mr. James Walker, Rev. G. H. Engleheart, Mr. J. T. Bennett-Poë, Mr. F. W. Burbidge, F.L.S., Rev. C. Wolley-Dod, &c.
- April 22nd.—Primula and Auricula Society's Show. "On Indian Primulas."
- May 13th.—"Hardy Spring Flowering Shrubs and Trees."
- May 28th, 29th.—Great Show in the Inner Temple Gardens.
- June 10th.—"Herbaceous Pæonies," Mr. Geo. Paul and Mr. R. Irwin Lynch.
- June 24th.—Exhibition of Tea Roses by the National Rose Society. "Hardy Herbaceous and Alpine Plants," Rev. C. Wolley Dod.
- July 8th.—"Cultivated Lilies."
- July 22nd and 23rd.—Carnation, Fern, and Selaginella Exhibition at Chiswick. Carnation Society's Show.
- 22nd.—Conference on Carnations. Readers of Papers: Mr. M. Rowan, Mr. H. Turner, Mr. R. Dean.
- 23rd.—Conference on Ferns and Selaginellas. Readers of Papers: Mr. J. G. Baker, F.R.S., Mr. C. T. Druery, Mr. J. Birkenhead, Mr. E. J. Lowe, F.R.S., Professor Bower, F.L.S., Mr. W. H. Gower.
- Aug. 12th.—"On Fruit Drying by Evaporation as Practised in America," Mr. E. W. Badger.
- Aug. 26th.—"Hollyhocks," Mr. James Douglas.
- Sept. 9th.—"Gladolus," Mons. V. Lemoine and Mr. J. Kelway.
- Sept. 23rd, 24th.—Exhibition of Dahlias and Grapes at Chiswick.
- 23rd.—Conference on Dahlias. Readers of Papers: Mr. T. W. Girdlestone, Mr. Shirley Hibberd, Mr. Walter H. Williams, &c.
- 24th.—Conference on Grapes. Readers of Papers: Mr. T. F. Rivers, Mr. R. D. Blackmore, &c.
- Oct. 14.—"On Crinums," Sir Charles Strickland, Bart.

Oct. 28th.—“Trees and Shrubs for Large Towns,” Dr. Masters, F.R.S.
 Nov. 11th.—“Chinese Primulas,” Mr. A. W. Sutton.
 Dec. 9th.—Ordinary meeting.

REVIEW OF BOOK.

The Journal of the Royal Horticultural Society. Part 3, Vol. XI., October, 1889. Edited by D. MORRIS, Esq., M.A., and the Rev. W. WILKS, M.A.

THE long expected issue of the Journal containing the papers read at the Rose Conference, report of proceedings, and analysis of statistical returns, has just come to hand as a substantial volume of about 440 pages. It is almost needless to say that it contains a great variety of interesting matter; but what will probably be looked for most especially is “Digest of Statistical Returns,” upon the preparation of which the Rev. W. Wilks has expended so much time and labour. This will amply repay for a careful examination, and though at first glance it appears a little complicated owing to the system of abbreviation necessarily adopted, a few minutes’ quiet reading enables anyone to grasp the idea so ably carried out.

One of the shorter papers, that by Mr. E. Mawley, on Rose stocks, is very instructive, and the following summary indicates his experience and views clearly:—

“1, That on a mellow loam of good depth, with porous subsoil, Hybrid Perpetuals on almost any stock will thrive and do well.

“2, That the seedling Briar has so far proved itself the best stock for the heavier soil and colder climate of my present garden.

“3, That the Briar cutting under similar conditions is but little inferior to the seedling. In fact, from the first it has been gaining on the latter. In the autumn of 1886, the plants on the cutting were credited with but five first places against twenty-seven for those on the seedling Briar, whereas the most recent examination accords thirteen first places to the cutting and twenty-one to the seedling.

“4, That the Manetti has proved itself in every instance inferior in a greater or less degree to the two other stocks, while in ten out of the thirty-four varieties in the experimental beds the difference is very marked. On the other hand, with thirteen other varieties there was little to choose between the three stocks.

“I find that Roses budded on these stocks flower, as a rule, in the following order. First come those on the Manetti, then those on the Briar cutting, and lastly those on the seedling Briar.

“For Tea Roses I have found the Briar cutting and seedling Briar excellent stocks. In dry seasons the latter has the advantage, and in wet ones the Briar cutting. The dwarf standard Briar also suits many Teas admirably, and some even better than either the seedling or cutting, and has the further advantage of keeping the blooms from getting splashed during heavy rains. It is of course, however, unsuitable for very cold districts, and is less enduring than dwarf Briars. The standard Briar also suits certain varieties of H.P.’s better than any other stock.

“The question of stocks is a more complicated one than would at first appear, for in order to obtain the best results the soil must not only suit the stock, but the Rose budded on it must work harmoniously with that stock. The character of the subsoil has also almost as important an influence as the surface soil. I may state in passing that there are a few kinds of H.P.’s which refuse to grow with me at all on any of the dwarf stocks I have mentioned.

“I had intended to touch on the subject of soils and their suitability to different stocks, but have thought it advisable, on more mature consideration, to confine myself entirely to a simple statement of my own experiences; for in discussing a matter of this kind I think you will all agree with me that one grain of fact is worth any number of pounds of theory. My experiments have, I trust, proved useful as far as they have gone. I can only regret now that they could not be carried out on a larger scale. I am pleased, however, to hear from Messrs. Cocker of Aberdeen, that they have during the last few years been testing stocks on similar lines to my own, and that they have arrived at some very interesting results, which will appear in the returns recently sent in to this Society. If other nurserymen and amateurs in different parts of the kingdom would only follow their excellent example, we should then at no very distant date be in a position to arrive at some more definite and satisfactory conclusions than in the present state of our knowledge is possible.”

As to the other contents of the book the following list will give the best idea of their extent and varied character:—“On Irises,” by Professor Michael Foster, Sec. R.S.; “the Strawberry,” by Mr. A. F. Barron; “Strawberries for Market,” by Mr. George Bunyard, F.R.H.S. The National Rose Conference.—Address by the Very Rev. the Dean of Rochester, D.D.; “Pruning Roses,” by Rev. A. Foster-Melliar, M.A.; “the Grouping of Garden Varieties,” by Mr. W. Paul, F.L.S.; “Roses since 1860,” by Mr. Geo. Paul, F.R.H.S.; “Decorative Roses,” by Mr. T. W. Girdlestone, F.L.S.; “R. Polyantha as a Stock,” by M. Viviani-Morel; “R. Canina from the Ural Mountains,” “the Botany of Roses,” by Mr. J. G. Baker, F.R.S., F.L.S.; “Modern Roses and Hybridisation,” by the Right Hon. Lord Penzance; “A New Classification of Roses,” by Professor François Crépin; “Rose Construction,” by Dr. Masters, F.R.S., F.L.S. “Notes on Australian Roses,” by Baron Sir F. von Mueller; “Note on New Indian Roses,” by Dr. George King; “Digest of Statistical Returns at the Conference,” by Rev. W. Wilks, M.A.; “Synonyms and Abbreviations used in Digest,” Notes on Digest of Statistics,” by Rev. W. Wilks, M.A.; “Summarised

Result of Statistics,” by Rev. W. Wilks, M.A.; “Note on Species of Roses shown at the Conference,” by Dr. Masters, F.R.S.; “Note on Books and Drawings of Roses at the Conference,” “The Origin of the Florists’ Carnation,” by Mr. Shirley Hibberd, F.R.H.S.; “Peaches and Nectarines,” by Mr. T. Francis Rivers, F.R.H.S.; “On Conifers,” by Mr. W. Coleman, F.R.H.S.; “On Pears,” by Mr. W. Wildsmith, F.R.H.S.; Proceedings of the Society, March 12th to June 25th.

ST. ALBANS AND DISTRICT HORTICULTURAL SOCIETY.

AN Exhibition of Chrysanthemums, fruits, and vegetables was held in the County Club hall on the 4th inst. As the Show was held principally in order to clear the Society of the debt incurred at the summer Show owing to the adverse state of the weather, but few prizes were offered. The chief of these in the cut bloom classes went to Miss Debenham. There was a keen competition amongst the cottagers in the vegetable class. The same remark applies to the preserved fruit class. The Show, although very late, was a capital one, and was largely made up with honorary exhibits. The exhibits staged by Mr. Beckett, gardener to H. Hucks Gibbs, Esq., must be awarded the palm; his cut blooms were exceedingly fine, especially the Japanese, the best being Volunteer, Etoile de Lyon, Ralph Brocklebank, Boule d’Or, Geo. Daniels, White Ceres, Pelican, Mrs. W. A. Harris, Mr. H. Wellam. The six trained plants were very good. He also staged a fine lot of vegetables and fruit. Handsome groups were staged by Mr. Whitelaw, gardener to Lord Grimthorpe; Mr. Sconce, gardener to J. S. Hill, Esq.; H. Slade, Esq., and Mr. Nutting, gardener to J. Blundell Maple, Esq. Messrs. Lane & Son, Berkhamstead, staged a fine collection of Apples, the following sorts being very fine—Peasgood’s Nonesuch, Mère de Ménage, Bramley’s Seedling, Winter Queening, Prince Albert, Worcester Pearmain, Annie Elizabeth, and Lord Derby. A good programme of music, instrumental during the afternoon, and vocal in the evening, was got through, and added to the attractions.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—With the buds swelling and advancing for flowering the atmosphere must not be kept nearly so close, as it is important the blossoms come on steadily and have time to develop a strong flower, perfect in all its parts. A little ventilation should be given constantly, and above 50° it should be increased correspondingly with the temperature, but not allowing a decline below 50° in the daytime, sufficient artificial heat being employed for that purpose, and with sun an advance may be allowed to 65°, closing for the day before the temperature has receded 55°. A temperature of 40° to 45° is ample at night or in mild weather. When the flowers are advanced so that the anthers are showing cease syringing, but afford a moderate amount of moisture by damping available surfaces, as borders, paths, &c., in the morning and early afternoon. Avoid a moist, close, stagnant atmosphere with a high temperature at night. Make sure that there is no deficiency of moisture in the inside borders. If necessary supply tepid water or liquid manure. Moistening the surface is only a waste of time. Afford enough to moisten the soil through to the drainage. Weakly blossoms and failures in setting are often a consequence of moisture being given the tops of the trees instead of the roots. If there be a superabundance of flowers remove that on the under side or back of the trellis by drawing the hand contrary to the growth. It will materially assist the swelling and strengthen the remaining flower.

Second Forced House.—This may be the first in some establishments. It is that from which fruit is to be gathered in May or early June, and to which fire heat will be applied about the New Year. It must be closed at once, fire heat being only used to exclude frost, the trees being sprinkled in the morning and early afternoon, allowing time for them to become fairly dry before night. Nothing is so enfeebling as keeping the trees constantly dripping with moisture, especially at night. Do not allow the temperature to exceed 50° without full ventilation. Soak inside borders with tepid water or liquid manure, and protect those outside with dry leaves or bracken and a little long litter, allowing a slope to the front, so as to throw off cold rains and snow. Some tarpaulin or spare lights would be an advantage.

Succession Houses.—Proceed with the pruning, bringing matters in respect of cleansing the house and trees to as speedy a conclusion as practicable. If the houses have fixed roof lights ventilate to the fullest extent in all but very severe weather. It is much the best plan to remove the roof lights and expose the trees to the elements for the winter. Even the latest and unheated houses should be treated that way. We find the best results attend that method of procedure. Trees even that are liable to cast their buds, such as Noblesse, retain them, and

attain to a much finer development of flowers than attends trees that are kept constantly evaporating from the young wood through the time they are at rest by fixed roofs. The fogs, drizzling rains, and damp of November and December, with the drenching rains and snow, seem to suit Peaches, the trees being invigorated and the soil enriched.

PINES.—Judgment and considerable skill are required to maintain with limited means a successional supply of ripe Pine Apples throughout the year. The cultivator, with his tens or twenties, is often at his wit's end how to obtain fruit at the right time, but with hundreds of successions there is no difficulty in maintaining an unbroken supply of fruit. Where a supply of ripe fruit is required in May and June, which is the time when home-grown fruit is most in request, and the plants are not showing fruit, it will be desirable to select from those started last March, which have completed a stout growth and are now in a state of rest, such as show the best indications of starting into fruit when subjected to a higher temperature both at the roots and in the atmosphere. If the plants can be accommodated in a structure to themselves it will be an advantage, but failing such they should have a light position in a fruiting house. It is not desirable to start more plants at this season than are absolutely necessary, as the fruit will come up more readily a month hence and be much stronger. Continue former instructions as to temperature, &c., but in very severe weather a fall of a few degrees in the temperature is preferable to extra sharp firing, and wherever practicable a covering placed on the glass at such times will be desirable, being a saving of fuel and better for the health of the plants.

PLANT HOUSES.

Bouvardias.—Plants that flowered in early autumn and have since had a good rest by keeping them dry and cool, may now be started into growth. When good bushy plants are needed in one season from either cuttings of portions of root, it is important to make an early start. The whole of the old soil should be shaken from their roots, the plants potted in moderately small pots and started into growth in a vinery or Peach house, or in a temperature of 50° to 55°. Before potting them, however, if a stock is to be raised from root cuttings, a few strong roots should be taken from each plant. No injury to the old stools result from this treatment. The portions of root must be cut into lengths of half an inch and placed in the centre of 2-inch pots, just covering them with fine soil. If these are plunged in brisk heat in the propagating frame they will quickly start into growth and be out of the way by the time cuttings are ready or the busy season for propagating arises. The stools as well as the root cuttings may be potted in equal portions of loam and leaf mould, with the addition of a liberal quantity of sand. The stools, after being potted, should be dewed with the syringe only until they display signs of growing.

Lilium Harris.—Bulbs that were potted as early as they could be obtained have growth 2 feet high. Care is needed to prevent them drawing up weakly by maintaining a temperature of 50° to 55° at night, according to the weather, and with a little ventilation on all favourable occasions. Be careful not to overwater them, and watch for aphides, which usually appear at this stage in the tops of the plants. Slight fumigation with tobacco is the best means of destroying them, and this should be done directly they are observed.

Hydrangeas.—Plants that were rooted early in 2½-inch pots and lost their leaves before they were boused may now be placed into 5-inch pots, the bud only being above the surface of the soil. One good crook at the base is ample. Soil is which Cucumbers have been grown is suitable, with the addition of about one-third leaf mould. Press the soil firmly into the pots. The plants can then be started in a temperature of 50°. As soon as they commence growing place them close to the glass. Water carefully at first; this is important until they have commenced growing, when liberal supplies may be given. Old stools that are kept in pots and have been cut back may be potted when opportunity offers, and plunged in frames. It is a mistake to keep those for yielding good heads too confined at their roots. Strong heads are the best because from these the largest and finest trusses are produced. Puny cuttings only develop small flower heads.

Fuchsias.—A few plants that have enjoyed a complete rest may be pruned and started into growth. Shake them out and start in smaller pots, the same as advised for Bouvardias.

French Pelargoniums.—Old plants that were cut back and started in moderately small pots should be placed into a larger size. Use for a compost good loam, one-seventh of manure, and sand. Drain the pots well, and press the soil firmly into them. This will insure dwarf sturdy growth. Arrange these plants close to the glass, and give no more fire heat than is necessary to expel damp, and maintain a temperature of 40° to 45°. Young rooted plants in 3-inch pots should be given others 2 and 3 inches larger. The strongest can be placed in the last size. Grow these on under the conditions advised for old plants. The shoots of these may be pinched from time to time as they need it. Those for early flowering that were pinched in September must be kept close to the glass, and in a temperature 5° warmer. Those showing flower that were grown through the summer for this purpose should not be in a lower temperature than 60°. Admit air whenever favourable to prevent the plants drawing up weakly. Supply water carefully, giving no more than is really necessary to prevent flagging. Too much water causes the foliage to be spotted, and induces soft growth. Fumigate with tobacco if aphides appear.

Zonal Pelargoniums.—Those well prepared by being thoroughly ripened outside will continue to flower profusely if they are not overwatered, the atmosphere being kept moderately dry, and the tempera-

ture about 60°. During fine mild weather admit a little air daily. Remove decaying leaves, and give weak stimulants every time water is needed.

Cinerarias.—Late plants, now in 3-inch pots, may be placed into 5-inch pots, and kept in any position where they will be safe from frost. Small late Primulas may also be potted, and subject to the same treatment. Plants potted now flower most profusely late in spring, and are the best from which to save seed.

THE BEE-KEEPER

GLASS SECTIONS—THE PATENT LAWS.

ON page 454 "A Sussex Amateur" complains that I have not fulfilled my promise, and given the instructions I said I would on page 528 for December 6th, 1888, as to how to make the above, and he also asks for information concerning the patent law and the rights of patentees. For the first part, I must refer him to the Editor, to whom I sent the drawings and descriptions long ago. No doubt "want of space," caused by so many shows in summer, has been the cause of their non-appearance. If "A. S. A." cannot wait he can, perhaps, glean nearly all he wants from a Government Blue Book, published by the Comptroller of Patents, 25, Southampton Buildings, Chancery Lane, London, W.C., and sent post free for 2s. 6d. In writing ask for "Blue Book on Bee Hives, A.D. 1888, No. 7660."

Answering the other part, which I feel quite qualified to do, as it is a subject I have studied, I may inform him that a patentee owns the exclusive property in his invention. No one has a right to make, use, sell, or even handle, what he holds his patent on without his consent, except for *bona fide* experimental purposes. This is the only exception, so that he must not make for his own use. Everyone has a right to improve on, add to, or take from a patent invention, and get a valid patent on it, but he acquires no right to use his improvement without the consent of the original patentee. However, if terms are refused he can, under the Act of 1883, apply for a compulsory license, so as to enable him to work his patent, when the Court will fix the royalties and the securities.

In this country a patent is a grant from the Sovereign in exchange for a full disclosure of his invention. It is not granted as a matter of "right," therefore if an inventor first publishes his invention he cannot get a valid patent, because he has already parted with his equivalent part of the bargain. The only right that an inventor has is to keep his invention a secret, and if he decides on this course all the Courts in the country will protect him in his decision, and if he dies the secret may die with him, as was very often the case before the passing of the Patent Acts. This would be a loss to the community, so the Patent Laws were adopted in order that inventors should be induced to make their inventions public.

In the United States of America every inventor is entitled to a patent as a matter of right, and of which the law cannot deprive him, if he applies within two years of first making it public. Inventors there are thus allowed to publicly use or test their inventions before patenting them; but it often happens, if the invention is a valuable one, a host of claimants spring up, hence the Courts are occupied for years in deciding these claims, which cannot arise under the British system.

What is here known as "nine months' provisional protection" is really no protection, as anyone can make, use, or sell the article "protected" until the date of acceptance of "complete specification." What it really does, and what it was instituted for, is to give inventors the benefits given by the U.S.A., and yet be essentially British. Therefore it only fixes the "date," and an agreement on behalf of the Crown to grant a patent if completed within nine months, but which may be extended to ten months by paying £2 more. If the invention is kept secret in the meantime, the first application can be abandoned and a fresh one made; but should someone else have made the same discovery you can go on with the first and take priority over him.

"A Sussex Amateur" particularly wants to know how he can evade the patent rights on metal cornered glass sections. Now Mr. Editor, I do not feel inclined to side with anyone who would cheat an inventor of his just rights by any quibble or sophistry. He has as much right to enjoy the fruits of his labour and make the best he can of it as a market gardener or writer has of his labour. The Copyright Acts protect the latter for his whole life and seven years longer, or if he die within thirty-five years then such a length

as will make up forty-two years, and he is not obliged to be in any haste in registering his title, and when he does so the fee is only 5s. To take off a man's invention without his consent is as much stealing as taking a Cabbage out of his garden, but in law the offence is far greater and penalties are very much more than any J.P. can inflict on a common pickpocket.

I may, however, for the information of "A Sussex Amateur," say that I have seen the tin corners he refers to advertised as "patented" and "registered" as a "design." The latter only protects the "shape" of a thing, and cannot protect an article that should be patented. I thought of, and tried the very same thing some years ago, and discarded them; in fact, it was because I did not like the looks of these tin corners, and took them off to see how a section would look, when I found the comb was sufficiently fast to the glass sides to hold them together, and then set to work to contrive means of holding them in position until the bees fastened them together by means of their comb. Putting my sections together is now as simple and easy as building toy bricks. There is absolutely nothing used at the corners to hold them together. The glasses are cut on a very simple special board, and are bound to be exactly true to size, no matter how the glass used may vary in thickness, while in putting together the glasses support one another, making the thing as easy and simple as possible. No wonder, now it is being generally known, that hosts are jumping up claiming to have used the very same thing, yet some of them distinctly declared they could not guess how it was to be done when I said "nothing was used at the corners to hold them together, either visible or invisible, yet the glasses were all cut true right angles." I say, if they had known it they would have "guessed" at once and not have laughed at me, and plainly hinted I was humbugging them, but such is life and the experience of—
A HALLAMSHIRE BEE-KEEPER.

ERRATUM.—In my article last week at the bottom of the first column, page 496, 90° is a misprint for 95°; and Mr. W. L. Hutchinson should be Mr. W. Z. Hutchinson.—A HALLAMSHIRE BEE-KEEPER.

[Many of our readers will be glad to peruse the above interesting notes on the Patent Laws. In respect to the drawings referred to we intended having engravings prepared under the assumption that they would be serviceable to persons who desired to work from them; but as we find the method we intended to portray is patented, and as our correspondent states "no one must make the articles for his own use," he simply tells us it is of no use publishing the details in hand. He is quite justified in patenting anything the authorities admit is a distinct invention, and no one is justified in acting contrary to the law on the subject; and, further, we do not see on what grounds "A Hallamshire Bee-keeper," with his high respect for morality, can desire us to place temptation in the way of the world by publishing his drawings. The matter, therefore, remains still longer in abeyance.]



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (F. A.).—There is no work embracing all the subjects that your inquiry suggests, nor any periodical exclusively devoted to the question. There are small works treating on special subjects, but as you do not indicate the object you have in view we are at a loss which to mention. (B. D.).—The price of the essay on "Profitable Fruit Growing" is 1s. 3d. by post from this office.

Grapes Unsatisfactory (S. M.).—Though you took pains in packing the Grapes were shaken into a mass, evidently through the skin

being defective. The Vine has probably been overcropped, and is in a more or less debilitated state. Additional root action in fresh soil which contains lime and potash is requisite for the production of more substantial skins, without which the Grapes cannot keep long after they are ripe.

Shortening the Long Sappy Growths of Hybrid Perpetual Roses (An Inquirer).—You are quite right in shortening the long sappy growths of both standard and dwarf Roses to prevent their being broken by wind or snow. Shortening hard back, however, is not advisable, as if the spring prove mild growth will be made from the buds at the upper part of the wood retained, and is liable to be injured by spring frosts. Your practice, however, of pruning again in spring, merely shortening irregularities now, we find very desirable, particularly so in exposed situations.

Roses (S. S.).—Mr. Bardney does not paint the stems of his Roses with anything, and as he keeps them absolutely free from mildew by the method described last week he is satisfied, as anyone might well be, with Roses so clean, healthy, and floriferous as those in his charge. You can paint the stems of your plants if you wish. It will do no harm, and the sulphur will soon be washed off when syringing commences. The painting will not prevent mildew attacking the leaves under conditions that are favourable for its growth. No. 2 next week.

Jerusalem Artichokes (W. R. R.).—You say "The bulbs of Jerusalem Artichokes come all massed together in a lump at the roots of the stems; soil good light, and position frequently changed. Change of seed tubers has been recommended: can the want of this be the cause?" We print this question in case any of our correspondents can suggest a better method than the one indicated for overcoming the habit complained of. Wood ashes are excellent for the crop, but we can give no assurance that they would effect the desired purpose, and fresh tubers are worth trying.

Celery Running to Seed (J. H.).—The chief cause is too early sowing with checks to growth afterwards. To have good Celery at this season the first fortnight of March is a suitable time to sow, the plants being pricked off outdoors in early May, up to which they should be kept well up to the light in a cool house or frame, and be planted out in well manured trenches early in June, keeping them supplied with water, and affording liquid manure occasionally. With this treatment you will have splendid heads. For an early supply the seed should be sown early in February, the seedlings pricked off and grown on in gentle heat, hardening them off so as to be able to plant out in well manured trenches during the first moist mild weather after the middle of May. During summer it must be well watered and supplied with liquid manure in order to have fine solid, crisp, well-flavoured heads in late summer.

Thinning Larch Plantation (J. E. H.).—The Larch will now be suitable for stakes and various useful purposes, and the first thinning should be effected as soon as practicable. The trees being planted so thickly, it will be necessary to cut away about one-fourth of the worst shaped and ill placed, or, if the trees are very vigorous and require more room for their healthy development, it may be necessary to thin out more freely, always bearing in mind that excessive thinnings are more injurious than beneficial; at the same time the thinning must be efficient, allowing top space for those that remain, so as to insure a sturdy growth. Where the trees have grown most they should be thinned most, and *vice versa*. At the next thinning, say in three years hence, the trees will be suitable for rails and general fencing purposes. Therefore it is not advisable to thin too severely at first, but whilst considering the ultimate good of the trees, keep in view the utility of the thinnings, as they may be of little use at first, but if left a little longer (without prejudice to those that would remain after thinning), their value would be considerably enhanced. Judgment must be exercised, removing in the first instance the most unsatisfactory in growth.

Poinsettias Flagging (Weybridge).—The bracts of Poinsettias are apt to flag either in a cut or uncut state soon after being transferred from a warm stove to much cooler quarters. They are more serviceable either for table, house, or conservatory decoration if not grown in a very high temperature, but in any case they ought to be slightly hardened off before they have to "rough it." Even this will not prevent flagging in all instances where the bracts are used out of water for dinner table decoration. They ought not to be left on the table or to the tender mercies of the indoor servants all night, but the gardener or responsible assistant should attend at the proper time and place all that are needed for future use in water. A warm, rather than a cool place, is most conducive to freshness of cut Poinsettias, and we have frequently been under the necessity of taking them back to the forcing houses for a few hours. Moderately hot water also is better than cold for restoring them quickly. When nothing will recover them properly the heads may yet be split up and used for fringing groups of flowers, and the base of small fine-foliaged plants set on the cloth. A few green Poinsettia leaves with the coloured bracts are very attractive when made good use in cloth decoration.

Plants for Cut Flowers Outdoors (Old Subscriber).—Dahlias should be sown in early March, in gentle heat, and when large enough to handle be potted singly, and grown on in gentle heat, hardening so as to be strong at the end of May for planting out. Zinnias and Asters should be sown in frames in gentle heat in early March for an early bloom.

and in early April for a late one, in a frame either with slight or without bottom heat. The first will need to be kept steadily growing, pricking off in pans or boxes when large enough, and hardening well off, plant out after the middle of May. The latter may also be pricked off and carefully attended to, the chief thing being to keep the plants sturdy and clean, and to plant out at the end of May or early June. The summer flowering Chrysanthemums should have the cuttings inserted now, striking in gentle heat, potting and growing them in a cool house, but one in which they will not suffer from frost and damp through the winter, and in cold frames or a cool house in spring, hardening well off so as to place out sturdy plants in late May or early June. They should be shifted into large pots in spring, and be stopped when about 6 inches high. Chrysanthemum coronarium varieties should be sown outdoors early in April, or if you require early flowers they may be sown in gentle heat in March. Sweet Sultans are much esteemed for cutting, and so also are Cornflowers.

Converting Vinery into Peach House (*Inquirer, Kent*).—

There is no apparent reason why you should not successfully turn your vinery into a Peach house, but we question if you will do wisely in cultivating trees in pots in preference to planting out permanently. It is only the most skilful cultivators, and who in addition are in a position to devote much time and labour to their cultivation, who succeed in annually gathering profitable crops from potted trees, and if our advice is to be taken you will not adopt that method of culture. Your house being of good height—viz., 14 feet at the back and 7 feet high at the front, is admirably adapted for the system of training the trees on cross trellises as proposed. In most instances where the plan is a partial failure it is owing to the lowness of the fronts of the houses, much limited head room causing a woody rather than fruitful growth. Tomatoes would succeed remarkably well on the back walls, and such would also suit Peaches and Nectarines admirably, as it is not often these have a chance to spread to their full extent. Tomatoes might be grown well on the cross trellises, and the back wall devoted to Peaches and Nectarines. Trees that ripened fruit during June and July would naturally shed their leaves rather early, and in any case you may safely utilise the house for storing and flowering large quantities of Chrysanthemums. The latter thrive best in a dry airy house, only sufficient fire heat being employed to exclude damp and frosts. This would not unduly excite the Peach buds or injure the trees in any way, but many of the former might drop prematurely if any attempt to force Chrysanthemums were made.

Cinnamon (*L. M. S.*).—Cinnamon, which is the inner bark of *Cinnamomum zeylanicum*, a tree 20 to 30 feet high, and 12 to 18 inches in diameter. It is a native of Ceylon, but is found over almost the whole of India, the islands of the eastern Archipelago, South America, and the West Indies, in all of which it is cultivated. The whole plant has the same aromatic properties as is found in the bark of commerce. The root has the odour of saffron, and yields a great deal of camphor by distillation with sea water. The flowers have the smell and taste of the bark, and they furnish both an essential and concrete oil, which is used in the countries where it is obtained against dysentery, fractures, and as a cosmetic. The fruit has a smell somewhat like turpentine, and a taste like juniper berries; it is about the size of a Plum, of an oblong form and black colour. When ripe a fatty substance is obtained from it, called Cinnamon suet or Cinnamon wax, by bruising and then boiling it in water, and removing the oily substance which floats on the surface, and allowing it to cool and become concrete; this is used for making candles, which yield a most delicious odour. The wood has the same smell as the fruit, and is used for making trunks, boxes, and articles of furniture. From the leaves an oil is obtained, which more resembles that of cloves than of cinnamon, and which is sold by traders as oil of cloves. Cinnamon branches are seldom cut less than half an inch, or more than 2 or 3 inches in diameter. The bark is removed by making longitudinal incisions, and it is then taken off in strips. The strips are placed one above another, in parcels 8 or 10 inches thick, and allowed to remain for twenty-four hours, when a fermentation takes place, which facilitates the removal of the outer pellicle and the green part of the bark. The inner bark is thus left free, and is finally rolled longitudinally into cylinders or long quills, about 3 feet long, and the smaller quills are pushed within the larger; these are dried on clay, first in the shade and subsequently in the sun. When packed black pepper is used to fill the intermediate space, by which it is said that damp is absorbed, and the flavour of the cinnamon preserved.

Wire Structure for Fruit (*Northumbrian*).—Gooseberry houses or permanent structures covered with galvanised wire netting are frequently to be met with in various parts of the country, and in all probability their numbers will increase considerably. They are not devoted exclusively to Gooseberry culture, but are attached to high walls, these being furnished with Plum and late Cherry trees, while bushes of these and also Gooseberries and Currants share the covered space clear of the walls. In the midland and southern counties generally a south border would not be devoted to these fruits, a cooler aspect better suiting all of them. In your case probably a south border would suit any of the fruits named, and they might, therefore, be covered in permanently as you suggest, as well as the Peaches, Nectarines, and Apricots. The structure ought to be of a durable character, and so formed as to be uninjured by a great weight of snow, which lodges readily on the close mesh netting necessarily used. A gentle slope to the front is advisable for several reasons. The front

ought to be fully 5 feet high if bushes or dwarf trees are grown under the covering, and this in your case would give a fall of 4 feet from the back. It is advisable to use stout oak posts, the front plate being of good red deal. The rafters may well be 5½ inches by 2 inches, and if these are disposed 8 feet apart, duly morticed to the back wall plate, and fitted to the front plate, this will be all the framework necessary. In some instances the posts and rafters are placed 12 feet apart, and the latter further strengthened by having two purlins of 3½ inch by 2-inch deal. In order to keep out quite the smallest birds as well as mice, both of which are at times very troublesome, it is necessary to use ¾-inch mesh wire netting not merely along the front but over the whole structure. Larger sizes have been tried, but were not effective. It should be remembered that if birds generally are rigorously excluded from hardy fruit trees and bushes various insect pests, notably the Gooseberry caterpillar, may gain the upper hand, and prove more destructive than any other enemy. To counteract this evil it is a good plan to have a few large wire-covered shutters fitted in between the posts, these being removeable or fixed at will by means of stout hooks and staples. During the winter months or till such times as neither birds nor, as in your case, rabbits will be troublesome, the shutters may be kept closed, but just as the buds are bursting into full leaf the birds should be admitted, and not excluded again till the fruit is ripening. The wire netting would not afford protection from frosts, but with a permanent structure up it would be a simple matter to add mats or blinds. Glass being so very cheap, why not glaze the roof down to about 4 feet from the coping? This would necessitate occasional applications of water to the borders, but the great improvement in the quality and quantity of the crops would more than compensate. It should be added that it is a good plan to rough plane the timber used in the construction of a wire netting-covered structure, this admitting of two or three dressings of black varnish being applied with great preservative benefit.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*R. J. H.*).—The Pear is Easter Beurré. (*W. H. D.*).—Very good specimens of Golden Winter Pearmain. There has been no alteration in folding the pages, it is the customary way. Machine-cut pages usually spoil many numbers for binding purposes.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. M. A.*).—1, *Eranthemum pulchellum*; 2, Insufficient without flowers; 3, *Physalis Alkekengi*; 4, *Oncidium sarcodes*. (*W. C.*).—The specimens have been greatly damaged in transit, but as nearly as we can determine they are as follows:—1, *Adiantum assimile*; 2, *Adiantum scutum*; 3, Insufficient; 4, *Nephrolepis davallioides*; 5, *Adiantum pubescens*.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., 237 and 238, High Holborn.—*Seed Catalogue (Illustrated with Coloured Plates)*, 1890.

H. & F. Sharpe, Wisbech.—*Seed Potatoes*, 1889-1890.

W. E. Bryce, Victoria Cottages, Archway Road, Highgate.—*Catalogue of Chrysanthemums*.

COVENT GARDEN MARKET.—DECEMBER 11TH.

No alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve ..	2	0	to	6	0	Oranges, per 100 ..	4	0	to 9	0
" Nova Scotia and						Peaches, dozen ..	0	0	0	0
" Canada, per barrel	12	0	20	0		Plums, $\frac{1}{2}$ -sieve ..	0	0	0	0
Cherries, $\frac{1}{2}$ sieve ..	0	0	0	0		Red Curr. nts, per $\frac{1}{2}$ -sieve	0	0	0	0
Grapes, per lb.	1	0	3	0		Black ..	0	0	0	0
Lemon, case ..	10	0	10	0		St. Michael Pines, each	2	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	4	0	to	5	0	Leeks, bunch	0	2	0
Asparagus, bundle	0	0	0	0	Lettuce, dozen	0	9	1	3
Beans, Kidney, per lb. ..	0	6	1	0	Musbrooms, punnet ..	1	6	2	0
Beet, Red, dozen	1	6	2	0	Mustard & Dress, punnet	0	2	0	0
Broccoli, bundle	0	0	0	0	Onions, bushel	3	0	4	0
Brussels Sprouts, ½ sieve	1	6	2	0	Parsley, dozen bunches ..	3	0	5	0
Cabbage, dozen	1	6	0	0	Parsnips, dozen	1	0	0	0
Capiscums, per 100	0	0	0	0	Potatoes, per cwt. ...	3	0	4	0
Carrots, bunch	0	4	0	0	Raubarb, bundle	0	3	0	0
Cauliflowers, dozen	2	0	4	0	Salsify, bundle	1	0	1	6
Celery, bundle	1	0	1	3	Scorzonera, bundle	1	6	0	0
Coleworts, doz. bunches	2	0	4	0	Shallots, per lb.	0	8	0	0
Cucumbers, each	0	3	0	6	Spinach, bushel	1	0	2	0
Endive, dozen	1	0	0	0	Tomatoes, per lb.	0	6	0	9
Herbs, bunch	0	2	0	0	Turnips, bunch	0	4	0	0

CUT FLOWERS.

	s. d.	s. d.	s. d.
Arum Lilies, 12 blooms ..	3 0	to 6 0	
Asters, per bunch, French ..	0 0	0 0	
Azalea, dozen sprays ..	0 9	1 6	
Bouvardias, bunch ..	0 6	1 0	
Camellias, dozen blooms ..	1 6	4 0	
Carnations, 12 blooms ..	1 0	2 0	
Christmas Roses, 12 blms.	1 0	2 0	
Chrysanthemums, dozen blooms ..	0 6	3 0	
Chrysanthemums, dozen bunches ..	3 0	9 0	
Epiphyllums, doz. blooms ..	0 6	0 9	
Eucharis, dozen ..	3 0	5 0	
Gardenias, 12 blooms ..	4 0	8 0	
Gladiolus (various) dozen sprays ..	0 0	0 0	
Hyalanthus (Roman) dozen sprays ..	0 6	1 6	
Lapageria, 12 blooms ..	1 0	2 6	
Lilium, various, 12 blms ..	2 0	4 0	
Lilium longiflorum, 12 blooms ..	3 0	6 0	
Maidenhair Fern, doz. bunches ..	4 0	9 0	
Marguerites, 12 bunches ..	2 0	6 0	
Mignonette, 12 bunches ..	2 0	to 4 0	
Fr., large bunch ..	1 6	2 0	
Myosotis or Forget-me-nots, doz. bunches ..	1 6	3 0	
Narcissus (Paper-white), dozen sprays ..	1 0	1 6	
French, 12 bunches ..	4 0	6 0	
Pelargoniums, 12 trusses ..	1 0	1 6	
scarlet, 12 bunches ..	4 0	8 0	
Primula (double) 12 sprays ..	1 0	1 6	
(single) 12 sprays ..	0 9	1 0	
Roses (indoor), dozen ..	0 6	1 6	
Red, dozen bunches ..	12 0	18 0	
Tea, white, dozen ..	1 6	2 0	
Yellow ..	3 0	4 0	
French, per bunch ..	2 0	3 6	
Soraea, dozen bunches ..	0 0	0 0	
Stephanotis, doz. sprays ..	4 0	6 0	
Sweet Peas, doz. bunches ..	0 0	0 0	
Tuberose, 12 blooms ..	0 6	1 0	
Violets, dozen bunches ..	1 0	2 0	
French, per bunch ..	1 5	2 0	
Parma, per bunch ..	3 0	4 0	
White Lilac, Fr., per bunch ..	6 0	8 0	

PLANTS IN POTS.

	s. d.	s. d.	s. d.
Aralia Sieboldi, dozen ..	6 0	to 12 0	
Arum Lilies, per dozen ..	9 0	12 0	
Arbor vitae (golden) dozen ..	6 0	24 0	
Azalea, various, p r doz. ..	30 0	42 0	
Begonias, various, per doz ..	4 0	12 0	
Balsams, per dozen ..	0 0	0 0	
Caladiums, per doz. ..	0 0	0 0	
Christmas Rose ..	0 0	0 0	
Chrysanthemums, dozen ..	6 0	15 0	
Dracena terminalis, doz. ..	24 0	42 0	
Dracena viridia, doz. ..	12 0	24 0	
Epiphyllum, per doz. ..	12 0	24 0	
Erica, various, dozen ..	12 0	18 0	
Enonymus, var., dozen ..	6 0	18 0	
Evergreens, in var., dozen ..	6 0	24 0	
Ferns, in variety, dozen ..	4 0	18 0	
Ficus elastica, each ..	1 6	to 7 0	
Foliage plants, var., each ..	2 0	10 0	
Hyacinths (Roman) 12 pcts ..	9 0	15 0	
Geraniums, Ivy, doz. ..	0 0	0 0	
Lobelia, per dozen ..	0 0	0 0	
Marguerite Daisy, dozen ..	6 0	12 0	
Mignonette, per dozen ..	0 0	0 0	
Musk, per doz en ..	0 0	0 0	
Myrtles, dozen ..	6 0	12 0	
Palms, in var., each ..	2 6	21 0	
Pelargoniums, scarlet, 12 ..	0 0	0 0	
Primula (single) per doz. ..	4 0	6 0	
Rhodanthe, per dozen ..	0 0	0 0	
Saxifraga pyramidalis, p r dozen ..	0 0	0 0	
Solanums, per dozen ..	6 0	12 0	



SWINE.

OF an outbreak of swine fever at Sutton Marsh, near Spalding, the last report shows that the disease is still spreading. Fifty-eight diseased pigs have died, seventy-two more remain affected, and 105 healthy pigs have been slaughtered under the superintendence of the veterinary inspector. The average value of the pigs lost is about £3.

Norfolk markets are all closed against pigs, owing to the prevalence of swine fever. The County Council returns show that the number of affected animals during the last four weeks was 505, and so the pig trade is closed for an entire county just when prices are high and trade should be at its best. Well may it be asked, Why is this? The answer must be plain and clear. It is entirely owing to gross mismanagement and reckless carelessness. Not that we wish to point to the Prince's county as being singular in this respect, for it is notorious that cases of fever occur throughout the length and breadth of the land with lamentable frequency, simply because farmers will not have pigsties kept thoroughly clean. No doubt the disease is contagious, and the Lincolnshire Contagious Diseases Committee have done well to reimpose restrictions against pigs coming from Norfolk, Cambridgeshire, and the Isle of Ely. But it has its origin in filth and nothing else, and when a case can be proved to have so arisen on a farm we would make it penal. It is not an easy matter to obtain such proof, or indeed to get precise information how the contagion spreads. Within four years we have had two outbreaks, both at off-hand farms, which were so isolated and both in such open healthy situations that such a thing as swine fever ought never to have touched them. Close inquiry showed the pre-existence of the disease in the locality of each farm, and we have little if any doubt that it was taken to them by sows driven there for breeding purposes. Now, we had been at some pains and expense to obtain good boars of the middle white breed, and glad were we to allow neighbouring farmers to use

them, but we were eventually compelled to forbid the bringing of strange sows to the farms in self defence.

Faulty construction of buildings for pigs is frequently the primary cause of fever. Swine are filthy animals, and therefore due care must be taken to the certain evil results arising from a natural tendency to filth. Bearing this in mind, the floors of pigsties should be impervious to moisture, with a plain surface that can easily be kept clean. Our own home-farm piggeries have the floors of beds and open courts entirely faced with Portland cement, with a gutter running along the front into a drain at one end. These sties are used chiefly for sows and their litters. After the pigs are weaned, at the age of from six to eight weeks, they are either turned into a sty by themselves or into a separate compartment of an open lodge and yard. The sows' range of piggeries consists of an open court or pound, a roofed sty, with a passage behind from whence the sows may be inspected without disturbance. Each sty is sufficiently commodious to afford ample space for the sow and pigs. The governing principle is to use the sties entirely for sows and very young pigs, and keep all other pigs in open sheds with small yards in front of them. Filth is never allowed to accumulate in the sties, which have the floors frequently washed, and the walls are regularly washed with limewater.

The common fault of piggeries is paved floors, and courts half filled with filth. Another fault is the crowding of too many pigs together, and allowing them to lie down, or half bury themselves in filthy litter. They are naturally very sensitive to cold, and must have due provision of shelter and clean dry litter, to thrive as they ought to do. There is, in point of fact, urgent need of reform in the entire management of swine. A neighbour of ours has some old sows, huge unwieldly animals, which often run out to grass with the cows, but which we know full well are not suitable for breeding from, for they have become so large that the risk of sucking pigs being smothered or crushed by them is very great. It has long been a rule with us when sows become at all unwieldly, to fatten and sell them, however good they may have been for rearing pigs. All sows do not make good mothers, and two or three extra should always be kept, so that the requisite number of pigs may be maintained, and faulty sows be promptly got rid of. Let swine management be placed upon a sound commercial basis, and let there be an end of all careless, easy-going practice with them, as with all branches of agriculture. Good buildings, simple and cheap; careful feeding, thorough cleanliness, the best breeds, and careful cross-breeding, the prompt disposal of each animal as it becomes ripe for market or home use, or has ceased to answer its intended purpose in the best way. These are the lines upon which safe action may be taken, and then we shall cease to hear of closed markets and swine slaughtered prematurely.

WORK ON THE HOME FARM.

Wintering of live stock is now in full action, all cattle being settled in the yards till next spring, and no fitful running out on pasture on fine days will be allowed. It unsettles the cattle, and does more harm than good, for the scant herbage they crop is insufficient either to satisfy or nourish them. All calves not required for stock are now being fattened for sale as veal early in the new year, when they generally sell briskly and well. Surplus store cattle should be got rid of even at a sacrifice rather than run any risk of a want of home-grown food next March. The store of such food is more than usually abundant; silage, hay, straw, and roots are all here in ample quantities, and should be turned to better account than just feeding cattle that in the end afford no profit but the manure.

All Channel Island cows, and any others at all delicate or weak, are shut in the cowhouse at night, but strong healthy cows of other breeds have open lodges and comfortable yards. There is always much bullying among cows, and we take care not only to have ample lodge space, but to have brass knobs screwed upon the tips of the horns of quarrelsome animals. We have a friend in Suffolk keeping two large herds of cows who will have none but Red Polls, both because of their intrinsic excellence and that they have no horns. He is right for both reasons, and we can strongly recommend the Suffolk breed as first-class dairy and butchers' animals. Cows repay one now for a generous dietary as well as at any season of the year, so that it be wholesome, nourishing, and free of taint. But we never trust to "stale" cows in winter, however well and carefully they may be fed, but take especial care to have some to calve at intervals throughout winter. Down-calving cows are eagerly sought after during the next two months, and Dutch cows, though

yielding milk of inferior quality, are coming over every week in response to a brisk sale, caused by the fact of the cows having just calved, or being due to calve shortly. Prices in the sale yards near the landing stage range from £18 to £23, and the same cows are resold near the metropolis at an advance of from £5 to £10 per head. It is in this instance, as in so many others, that Mr. Middleman steps in and "bleeds the farmer." Alert, keen, and prompt, the middleman makes it his business to watch every market, to seize every chance. When will Mr. Farmer apply the lesson, and learn to help himself?

THE SMITHFIELD CLUB SHOW.

THE annual gathering in the Agricultural Hall, Islington, was opened on Monday last (December 9th), when the Prince of Wales and other notabilities attended to inspect the display. Cattle and sheep are well represented, but not quite so numerous as in some previous years. Pigs are about an average, and there is a remarkably fine show of implements, the galleries being filled, besides a considerable space on the ground floors. Upon the judging day considerable discussion was caused and much dissatisfaction expressed by several cattle entries being disqualified for non-compliance with age conditions. Some thus excluded had been prizewinners elsewhere, and it is said their registered ages can be readily substantiated.

Our readers are probably most concerned with the seedsmen's exhibits, of which there is the usual liberal display in the galleries. Messrs. J. Carter & Co., High Holborn, have an admirable stand well representing all their chief specialties arranged in a tasteful manner. A large portion of their stand is devoted to the exhibition of the Elephant Swede, all of which have been produced by customers in various districts of the country, including H.M. the Queen and H.R.H. the Prince of Wales. This Swede is of fine texture, rapid maturity, and hardy. A large practical farmer in Bedfordshire tested the hardness of the Elephant Swede by leaving it upon the land during the prevalence of some very severe frosts in the winter of 1887, and he reported that "it is as hard as iron." Some of the largest shown weigh 30 lbs. Examples of Warden Prize Yellow Globe, Mammoth Prize Long Red, Improved Golden Tankard, and Golden Intermediate Mangold, Prizewinner Swede, Champion Green-top and Purple-top Hybrid Turnip, Imperial Kohl Rabi, Thousand-headed Kale, and numerous other types of agricultural produce are also shown.

Messrs. E. Webb & Sons, Wordsley, Stourbridge, well maintain their reputation by an extensive and handsome stand of farm roots in all their selected and well-proved varieties. Fine clean well-developed samples are arranged in great mounds that have a most imposing appearance. Potatoes, Cabbages, Grass seeds, cereals, and numerous other specialties are well shown.

Messrs. Sutton & Sons, Reading, have a magnificent exhibition in the north gallery, comprising great piles of handsome roots. Very noticeable is a new Mangold under the name of Crimson Tankard. It appears likely to commend itself to growers who prefer a red Mangold. The roots are handsome and free from coarseness. Berks Prize Yellow Globe Mangold, of which some wonderfully fine roots are shown, has been awarded the valuable prize open to all England and Wales (given by Messrs. Proctor & Ryland) for the best two acres of Mangold. The Judges reported the weight of the crop to be 53½ tons per acre. Specimens of Golden Tankard Yellow Flesh occupy a prominent place; the roots are handsome. Mammoth Long Red Mangold is shown to great advantage, broad shouldered roots very free from fangs, and of great weight. The old Sutton's Champion Swede is given a leading place, but one of the finest groups on the stand is formed with Crimson King Swede, a large tankard-shaped sort, selected several years ago. It is specially valuable for early feeding, as it matures quickly. The upper part of the root is dark purplish crimson, the flesh deep yellow.

Messrs. Oakshott & Millard, Reading, and Messrs. Harrison & Son, Leicester, also have most creditable exhibits of their leading varieties of roots and farm crops. Mr. W. Kerr of Dargavel has a large exhibit of Potatoes, and several other firms also contribute to the general display.

REPORT OF THE SEED HARVEST OF 1889.

THERE is an unprecedentedly large crop of Red Clover seed grown in England, which promises to be of excellent quality. The Continental crops are also reported to be very good, and we have seen many examples of fine purple seed offering at favourable prices. American reports are not so satisfactory, in many districts the grain is exceedingly small and wanting in colour. A report says:—"Crop presented a very promising appearance, and outlook favoured a good yield, but through continuous wet weather, with cold nights, the growth and development is retarded, and unless we have hot dry weather the late seed will prove a failure." The Canadian reports say:—"Crop is very short, the midge having taken it off again."

The crop of White Clover in all producing districts is a very fine one; samples are bright in colour and of high germination, and moderate prices are expected to rule.

The output of Alsike both in Canada and Europe appears unsatisfactory. Canadian reports say:—"The seed is smaller and inferior to last season." It is therefore to be expected that the best values and best quantities of this article will be obtainable in Europe.

There is a good crop of Trefoil, both in quality and quantity. Present prices are ranging very low, as compared with the value of this article at the end of the sowing season last spring. Lucerne is a good

crop, and values are expected to range somewhat in accordance with last year's quotations. Reports of the Timothy crops are favourable, the area under cultivation has been very considerable, and the seed harvested in excellent condition. The crops of Rye Grasses have been harvested in magnificent quality; samples are particularly heavy, bright, and free from impurities, of high germination, and are offered at remarkably low prices at the present time.

Anthoxanthum odoratum.—Average crop, with good standard of germination. *Agrostis stolonifera* is scarcer than last year, and as so many samples are infected with ergot, pure parcels realise good values. *Alopecurus pratensis* is a good crop, seed bright and heavy, and of high germination, values expected to range moderate. *Cynosurus cristatus* is an average crop, both in Great Britain and the Continent; values may be expected to range rather lower than last year. *Dactylis glomerata*.—For this article the European market depends almost entirely on that of New Zealand. At the present time large quantities of seed are carried over from last year, hence low values are expected to rule. *Festuca duriuscula* is again a good crop of heavy seed and high germination. *Festuca pratensis* is reported much shorter than last year, and higher prices are being asked. *Festuca elatior* is a good average crop in Europe, and is quoted at a lower price than previous years. *Poa trivialis* and *nemoralis* are good average crops, bright heavy seed of high germination. *Poa pratensis* is shorter than usual, although samples are of fine colour and excellent germination. This seed may be expected to be somewhat higher in value than last year. Uncertain weather during harvest has materially damaged the prospects of many crops that promised very favourably at an early period.

Peas generally are scarcer this year than last. The English crop is extremely short, and American and New Zealand advices are of a similar character. Broad Beans are a full crop, but good bright level samples are not plentiful; Runner Beans, notwithstanding the mild autumn, do not promise to be above the average. The Onion crop is practically a failure both in England and on the Continent.

The Mangold Wurtzel crop promises to be more satisfactory; the seed has matured earlier than last year, but there is still a quantity in the fields, considerably damaged by late heavy rains. The production of Rape has been smaller than usual, and stocks are very low, whilst prices above the average continue to rule. White Mustard is a fair average crop, but there is little new seed offering, and the prospects of the English crop are not good; values are expected to be firm. Swede and Turnip crops were again harvested in excellent condition, and present values are lower than they have been for many years.

Cabbage seed will prove a short crop, and the Carrot seed crop will come out short, the wet weather that has attended the ripening of the seed being very destructive.

Potato crops, notwithstanding the ravages of disease amongst certain sorts in some districts, promises to be a very good one generally, and moderate prices may be expected to rule for a considerable time.—JAMES CARTER & Co.

AUSTRALASIAN AGRICULTURE.—In the introductory lecture to the agricultural class at the University of Edinburgh, delivered at the opening of the present session, Prof. Wallace chose as his subject some aspects of Australasian agriculture. In this lecture, which has now been printed, Prof. Wallace urges that sheep farmers in this country will shortly feel the effects of rivalry with the flockmasters of Australia. There are 100,000,000 sheep in Australia, mostly merinoes, which are not, by the way, a flesh-yielding but a wool-giving race. Prof. Wallace hazards the opinion, by a very easy process of arithmetic, that, before many years have passed, Australia will be possessed of over 200,000,000. He makes, also, the astonishing statement that merino mutton is equal in flavour and texture to our best Highland, Welsh, or South Down mutton. Upon these two assumptions, for they are nothing more, he foretells calamities to meat producers of this country, which he, it is to be hoped, will not live to see.—(Nature.)

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.						Rain.
1889. December.		Baro- meter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature				
			Dry.	Wet.			Max.	Min.	In sun.	On grass			
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
Sunday	1	30.395	28.2	26.4	N.	38.8	36.0	26.1	46.4	20.4	—		
Monday	2	30.522	27.4	27.4	N.E.	37.9	34.6	24.8	33.4	18.9	—		
Tuesday	3	30.488	2.7	28.7	E.	37.0	33.0	27.4	45.9	20.9	—		
Wednesday	4	30.501	31.5	30.4	E.	36.4	33.9	24.4	41.3	17.8	—		
Thursday	5	30.587	35.3	33.8	N.E.	36.0	37.4	31.8	38.6	25.1	0.039		
Friday	6	30.608	36.0	35.4	N.E.	33.0	38.1	35.1	41.9	32.1	0.108		
Saturday	7	30.122	32.9	32.3	S.	35.9	35.2	31.3	36.5	31.7	0.111		
		30.460	31.4	30.6		36.9	35.7	28.8	41.0	23.8	0.258		

REMARKS.

- 1st.—Cloudy and cold.
 - 2nd.—Cloudy and cold, and slightly foggy in the morning.
 - 3rd.—Fine and bright throughout.
 - 4th.—Fine with the sun shining through clouds in the morning; cloudy afternoon.
 - 5th.—Cloudy, with showers turning to rain, and dull and drizzly all day.
 - 6th.—Cloudy throughout.
 - 7th.—Snow on ground in early morning, and it continued to fall slightly until noon.
- A cold week, the mean temperature being 32°; no intense frost, but very low maxima, the highest being only 38.1°.—G. J. SYMONS.



NOTES AND COMMENTS. EMIGRATION.

FROM time to time letters reach me, and accumulate, on a variety of subjects, and though they are attended to and briefly answered either publicly or privately, as each case demands, some of them are too suggestive to be cast aside, notably, I think, one from a traveller in search of what he did not find. This letter is dated Charlotte Town, Prince Edward's Island, Canada, November 5th, 1889, and may prove interesting to gardeners and others who may be contemplating a fortune-hunting trip to California. The letter was written after a sojourn of several months in the State referred to by a gentleman whose sound judgment, diligence, and skill as a physician enabled him to win a good position in the keen competition of London and to acquire means that justified him in leaving the Old World for the New in the hope of indulging in the pursuit which he loved of "growing something" better than he could grow at home; and his whole past life of enterprise on land and sea is a guarantee that he would not yield to trifling obstacles, hence the experience he relates is the more significant. Here is the Doctor's letter.

"I have not been able to write before as, being thoroughly disappointed with the barren desert of California, so unhesitatingly 'lied up' by my informants, I have been engaged for some months trying to find a place where I could cultivate a few vegetables, flowers, &c. As there is not an accessible acre of land on the American Pacific coast for which I would give five cents an acre, I have yielded to the entreaties of my family, and am on my way back to England, and shall call on you before Christmas. We have had a most wretched experience, and I am just recovering from fever and ague, caught in the Sacramento Valley, the people consoling me by saying that everyone has it; but I shall give you a true and unvarnished account of the whole country when I see you, and which I venture to hope you will be kind enough to insert in the Journal, with the view of deterring any more Englishmen ruining themselves and enriching the railroads by going to a country where nothing will grow except under from four to eight hours a day artificial irrigation. There is not a blade of grass in the State growing naturally, no hay therefore; abominable meat, no vegetables worth eating, and a temperature in the Valley of 115° during the day, falling to 54° and 58° at night. I have written down a few facts which I have seen myself, and had verified by old timer Californians, Texans, &c., and which are all literally true. All of us are now well. This climate (Prince Edward's Island) is grand; the fresh sea air mixed with the smell of the Fir and Pine trees is life-giving and most exhilarating. Charlotte Town is progressing not very rapidly, but surely. The farmers are, however, rapidly improving their farms, drive handsome traps, have good horses, and most of them roomy new houses and barns, and Mrs. B. says the country reminds her of England. The Island has always been called the Garden of Canada. It will do my heart good to see the old English faces and friends."

As is apparent, the home-sick M.D. very decidedly prefers the Canadian town, in which he regained health, to the dry and thirsty land in California, to which he seems to have been allured, and in which, instead of finding the flowers and fruits he longed for, caught the fever. California is a vast territory, and some parts are probably more favourable for emigrants to settle in than others. Fruit, notably Peaches, are grown in the open, the same as Apples and Pears are grown in England. There are also extensive Plum orchards, the fruit being chiefly dried and sold as prunes, while Grapes are produced on a large scale for wine-making purposes. That there is land worth much more than "five cents an acre" is undoubted, but my exploring correspondent failed to find it, though

others have succeeded. During the past summer Mr. Leonard Coates, who is engaged in growing fruit in California, spent several weeks in England, and I had the pleasure of conversing with him on the work in which he is extensively engaged; and if he did not find it profitable he would scarcely have been so anxious to return, seeing he has a good home in England, his father being the mayor of a provincial town. My correspondent, however, as I have said, evidently prefers the Canadian district from which he wrote, but the "old country" to either, the shores of which he is probably now approaching.

The experience of the gentlemen mentioned naturally leads to the important subject of emigration. From letters that reach me every week there is no doubt whatever, I am sorry to say, that the home market, to use a commercial term, is greatly overstocked with gardeners. Men of high character and unquestionable ability have been for a long time wearily waiting for appointments, and failing to find them at home, it is only natural they should direct their thoughts to the newer nationalities and more thinly populated territories beyond the seas. Men in ever increasing numbers are seeking advice on this most important subject, and as I am compelled to decline the responsibility of choosing for them a territory for a new home, I direct them to the best sources of information known to me. The first of these is the "Emigrants' Information Office," 31, Broadway, Westminster, S.W. This is referred to as follows in that mine of useful information, "Hazell's Annual for 1890:"—

"This office has been established under the supervision of the Colonial Office for the purpose of supplying intending emigrants with useful and trustworthy information respecting the British colonies. The classes chiefly required in the colonies at present are labourers and others connected with the land, female domestic servants, and farmers with a little capital. Hardly any assisted passages are now granted, Queensland, the Cape, and Natal giving the most encouragement. The importance of the subject is shown by the fact that the exodus from Great Britain has averaged during the last decade about 200,000 persons annually, of whom about three-fourths now go to the United States."

It may be added that the number of British and Irish emigrants in 1888 was nearly 280,000. Letters from persons desiring information and advice directed to the chief clerk at the address above given will be attended to without any cost to applicants. This is not a shipping office or agency established for obtaining passengers, but is a Government department, the officials gaining and disseminating the best information in the interests of persons who need it the most—intending emigrants. There is also a "Self-help Emigration Society" in London, established "for the underpaid and unemployed in Great Britain."

"This Society assists applicants whose character and fitness are assured to emigrate to Canada. The Society supplements the funds of the intending emigrant, and assists him to obtain his passage. Introductions are furnished to the Society's correspondents, who are men of position, forty-one in number, resident in various centres of Canada, and work is provided for the emigrant on his arrival out. The cost to the Society averages £2 10s. per head, and during the past year some 900 persons have been thus located at a cost of about £4500, £3000 of which was contributed by the emigrants and their friends. Employment was found for all who were willing to work. Application from intending emigrants should be made to Rev. R. Mackay, Secretary, 50, Fleet Lane, Farringdon Street, E.C."

I have no reason to doubt the genuine nature of this Society and mention it because I have of late received letters from persons whose capital is not sufficient, in my opinion, to justify their going on a prospecting expedition across the Atlantic. Too many have done this, and their small and hardly earned savings have been soon exhausted, and they have found themselves friendless, longing to return home, but without the means of doing so. It appears to me highly desirable that before leaving the Old World for the New, men with little or no capital should have introductions to residents there, whose willingness to aid them in obtaining employment has

been ascertained. Under those circumstances, thrifty able willing workers have obtained good appointments and positions; but, on the other hand, not a few who have made the venture without such provision have found themselves like lost sheep in a wilderness, and have had to endure privations which they never anticipated, and which would not have been exceeded, if equalled, at home.

In respect to skilled gardeners who have served private families and desire similar appointments abroad which they cannot find at home, one of them asked of me this question, "What do you think my chance would be if I went to America?" My reply was, "Ask a nurseryman of repute who knows you to give you a recommendation to write to a transatlantic firm of good standing which he may obligingly name; write to the firm, enclosing copies of testimonials, stating also your age and desire, and await a reply." Employment has been obtained in that way at once, and eventually good positions secured. I once asked a widely known American horticulturist to give me an idea of the demand for British gardeners in his "great country." His reply was significant. "Well, you know," he said, "you have plenty of men we don't want; they may be good gardeners and good workers, but insufficiently educated. We are ahead of you in that. Thoroughly competent, well trained, and well educated gardeners—in a word, workers, but gentlemen in speech and action, are the men we want, and there is a demand for such in America; but remember, we are overdone with mediocrities, and a man has small chance of getting a good place with us who cannot write a good letter." I do not comment on those remarks at present, but think it better to leave them for the reflection of those to whom they may be of interest. They are too serious to be disregarded.—J. WRIGHT.

JOTTINGS.

THE publication of a voluminous part of the Royal Horticultural Society's Journal reminds us that the exceedingly full and varied programme placed before the Fellows early in the year has been carried out in a manner which must be regarded as creditable to all concerned in the management. The outline of next year's proceedings has also been issued, and presents many features of interest, quite sufficient to ensure Fellows a substantial return for their subscriptions. The energy and enterprise of the Secretary, the Rev. W. Wilks, is evident in every department, and the increased popularity of the Society is undoubtedly largely due to his efforts. It is perhaps a long time since a secretary of the Royal Horticultural Society has adopted so broad a policy, and he wisely sees the desirability of recognising in a generous manner the existence and work of special societies. He was present at the annual meeting of the National Rose Society, of which he is a member, as he also is of the National Chrysanthemum Society, and he is announced as likely to be one of the visitors and speakers at the last-named Society's annual dinner on Thursday. Nothing will strengthen the Royal Horticultural Society so much as a pacific policy and friendly recognition of kindred organisations that are sharing in the work and doing it well. Virulent antagonism is profitable neither to societies nor individuals, but quite the reverse in the end, as the sympathies of all reasonable men are alienated by persistent, unfounded, or jealous opposition. It would be well if some hypercritical individuals would consider this in their own interest, for a man who assumes to be a universal critic is not only a public pest, but he commonly defeats his object. Generous, friendly criticism is most desirable for the common good, but a system of endeavouring to crush every project that does not emanate from a particular source can result only from exceedingly narrow views, an envious disposition, or private enmity.

The series of shows to be held during 1890 at the Royal Aquarium under the superintendence of Mr. W. Holmes has given rise to some discussion, and questions have been repeatedly asked respecting their connection with the National Chrysanthemum Society, and their material effects on the R.H.S. I can answer one of these questions positively—namely, that the National Society has no official connection with the shows which have been projected by the directors of the Royal Aquarium, who are providing the funds. The National shows in January, September, and November will of course form part of the series, and at the October show prizes will be offered for Chrysanthemums; beyond this the N.C.S. will neither gain nor lose by their success or failure. For my own

part I think it probable that if the dates of the R.H.S. meetings and Aquarium shows are conveniently arranged that both are likely to profit by the scheme. The two places are so near together that exhibits can be removed from one to the other in a short time and at a trivial cost, and if an exhibitor at the R.H.S. can see a prospect of recovering a portion of his expenses at the Aquarium he will not be slow to take advantage of it. The R.H.S. have adopted a consistent policy of offering no money prizes at any meeting or show. They have no doubt carefully considered the matter, and it is probably a right decision, as their funds will not admit of a lavish expenditure in prize money, and rightly applied they can be rendered more beneficial to horticulture in other ways. This leaves the shows practically to the nurserymen and such few amateurs as are willing to incur the cost of sending plants or other exhibits from a long distance. If only a portion of expenses could be paid it would greatly increase the number of amateur exhibitors, for after all we cannot ignore the £ s. d. side of the question in horticulture or in other trades. It is true that amateurs are often impelled by their enthusiasm to do even more than a tradesman, who simply regards the matter commercially, but it is more in the way of personal exertion and work, and few amateurs in these times are prepared to dip very deeply into their pockets in providing exhibitions for the advantage of others.

An impression seems to prevail that competitors at exhibitions gain enormous returns, and after a few years are literally rolling in wealth. This may have been correct at one time, when large money prizes were offered and there were a few exhibitors who enjoyed a monopoly at the leading shows throughout the kingdom, but it is not so now. Some specialists no doubt secure fairly good returns, but the utmost the average exhibitor can expect is to clear expenses. Any man who places the results of his skill before the public, whether he be amateur or gardener, may fairly require to see a prospect of recovering his outlay.

Some have said, Does the National Chrysanthemum Society intend to develop into a larger and more general organisation? If there were the need no doubt it could and would, but if the R.H.S. maintains and strengthens its position, such a course would be unwise and unsafe. An Orchid Society has been talked about, and substantial pecuniary support promised; but if the Orchid Committee of the R.H.S. is well and impartially organised, and performs its work satisfactorily, there will scarcely be room for a special society, as it might divide the interest, and a want of general support would be fatal to entire success. If the Committee had not been formed it is probable such a Society would have come into existence, and the R.H.S. might have even gained from the support of a strong young ally, in the same way as it could from the National Rose and Chrysanthemum Societies.

Several handsome Anthuriums have been shown from the Burford Lodge collection, and that named *A. burfordense*, exhibited at the recent meeting in the Drill Hall, was a worthy companion for those previously honoured. It had large rich scarlet shining spathes, broad and rounded, supported on stout stems well above the bold foliage. Quite a large group of Anthurium varieties and hybrids of this class can now be formed, and their decorative value is considerable.—L. CASTLE.

FRUIT CULTURE ON HEAVY LAND.

THE time has arrived for planting fruit trees, and as many readers may be engaged in this interesting operation for the first time, a few practical hints on the subject may be useful. It is very easy to dig a hole and bury the roots of a tree, but those who wish for immediate success must exercise forethought, consult practical experience, and if dealing with a heavy cold clay make some preliminary preparation, which may involve unthought-of expense. Better, however, plant fifty trees well than 500 badly. The former must bring profit and pleasure, the latter loss and disappointment.

It is not necessary to plant a tenth part of the varieties offered for sale; at the same time we believe there are few varieties in commerce but what may be profitably grown providing their peculiarities are studied and provided for. A variety, for instance, known to be a free strong grower at the expense of fruit should be planted in a shallow quick-draining border, containing a calcareous soil, not too rich—in fact, there are in plants as well as in animals constitutional peculiarities, which will often pay for finding out and providing for. In Nature it seems to be a rule, with very few exceptions, that the best thing requires the greatest amount of skill to produce it.

The advice so often given to keep the branches and shoots well thinned out is good, but we must not forget that the wood will not ripen if the roots are working at a great depth in a cold clay; there-

fore in planting endeavour to provide for keeping the roots near the surface, where they will feel the warmth of the sun—then, other things being equal, the wood and buds are sure to ripen, and fruit will follow.

To be successful in the cultivation of choice fruit on heavy clay soil we must have the roots completely under control, and provision must be made for preventing the border from become waterlogged, even through the wettest seasons. The mechanical conditions of a fruit border, whether indoors or out, is of the greatest importance, for if we can get a border thoroughly permeated with healthy fibrous roots the necessary chemicals can be easily supplied, either by natural or artificial manures; indeed, there are hundreds of barren fruit trees—not because they are growing in a poor soil, but because its mechanical condition prevents the trees from making anything but strong fibreless roots, consequently only sappy unfruitful shoots are produced.

It is not always a gardener's fault that the fruit trees under his charge are unfruitful, for he is frequently debarred for want of means and material from making the thorough preparations that his experience has taught him are essential to success. Garden proprietors will sometimes build walls at a great expense, but if a gardener asks to have a narrow border enclosed, so as to have the roots of his trees completely under control, he is often considered overreaching or putting the proprietor to unnecessary expense; hence he is obliged to plant his trees under conditions that can only bring him partial success. It is far better to prevent growth that is not wanted than to have to resort to the baneful practice of cutting out a quantity of shoots every year to keep the trees within bounds. We are well aware that judicious root-pruning will do much towards checking wasteful growth and promoting fruitfulness, but as prevention is better than cure, fruit trees that have to submit to any formal training should only have a limited root-space. This would prevent strong useless growth and induce fruitfulness. A shallow well-drained border, with some means of keeping the roots in it, is simply imperative on a heavy cold clay for the successful cultivation of all choice fruit. It would be difficult to estimate the quantity and value of manure and manure water that is annually wasted about the roots of fruit trees, because they are completely beyond the reach of it. First-class fruit that will ripen even in dull seasons is not produced after this fashion. Cultivators of such fruit know where to find the roots of their trees. They are, therefore, rewarded for the rich top-dressing and liquid manure that they annually give them.—J. H. W., *Leicester*.

AURICULAS SIXTY YEARS AGO.

I HAVE been looking over the "Florists' Guide and Cultivators' Directory," containing Coloured Plates of the Choicest Flowers Cultivated by Florists, with their Descriptions and an Account of the Most Improved Methods of Culture," by Robert Sweet, F.L.S., published by James Ridgway, Piccadilly, 1827 to 1829. To me this old volume is of intense interest, as some beautiful and truthful coloured plates of the leading varieties of Auriculas, Tulips, Carnations and Picotees, Ranunculuses, and other flowers are given, a Mr. E. D. Smith the artist, the illustrations being so true to Nature, and the colours still so good; in fact, it is a happy reminder of old days and old favourites, and growers long since gone from us.

Sixteen leading varieties of Auriculas of those days are illustrated and botanically described. These are Page's Duchess of Oldenburgh; Taylor's Glory in those days and for long after regarded as a glorious white edge, and still in Mr. Charles Turner's catalogue at 5s.; Stretch's Alexander, black velvety body colours and fine green edge, and described as being figured from a plant in the collection of J. Goldham, Esq., a name remembered by many an old florist as a cultivator of Tulips, Auriculas, and other florists' flowers, a long number of years since; Page's Champion, then a very beautiful green-edged, grown for a long period of years, and I believe still in some collections. The Editor remarks of this flower: "Our drawing was made from a plant in the collection of Mr. W. Smith, at Willow Walk, Bermondsey, from a plant that gained the first prize at the Hammersmith Show in April last (1826)," and further states, "It is one of the first-rate flowers when well blown, and is entitled to a place in all collections, but it requires particular care to keep it in good health, as it is not so free of growth as some varieties." Hedges' Britannia, another grey-edged variety, is figured, and it is stated that in Mr. Hogg's catalogue of that period the price was 20s. per plant. In Mr. Cannell's catalogue for 1881 this variety is named at 2s. 6d. as Britannia (Edge). It should be Hedges, as we well remember the variety; and in Cannell's subsequent lists it appears as Britannia (Smith's), and it is called "Smith's" in Mr. Turner's catalogue. I presume that at some time or other Smith's name was adopted,

as in the book I am referring to it is stated that, "Our drawing was made in April last from a plant in the collection of Mr. W. Smith, Bermondsey," who seems to have been a celebrated grower.

Grimes' Privateer, grey edged, is figured from a plant growing in Mr. Davy's nursery in the King's Road, Chelsea, London. Mr. Davy was a well known nurseryman in those days, and many an "old hand" will remember the old Pelargonium Davyanum, which made a sensation in those days. Grimes' Privateer still appears in Mr. Turner's catalogue at 3s. 6d. each. Cockup's Eclipse was for a long number of years held in great estimation, a fine green edged, and it still finds a place in Mr. Turner's catalogue, but it should be known as Cockup's, not "Cocup." Pollet's Highland Boy was a popular flower, so also was Mare's Navarino, a flower in which the green edge was very prominent. Another illustration is that of an old white-edged flower, Wild's Black and Clear, very distinct in its markings and colours, and taken from a plant in Mr. Hogg's celebrated Paddington Green collection: Redman's Metropolitan, a shaded self or Alpine, fetching in those days 7s. 6d. each. Smith's Waterloo, a large, bold, green edged, was much esteemed then, the selling price being 15s. to 20s. per plant, but I think this variety has passed out of cultivation. Lawrie's Glory of Cheshunt was in those days a very fine variety, and described as such in Hogg's catalogue and priced at 15s. to 20s. each. Howe's Venus is figured and described as a shaded Alpine. Booth's Freedom, for many years a very fine variety, is also illustrated, and the selling price 20s. to 25s. a plant. It is not improbable that this old variety still exists in some collections. Lawrie's Hertfordshire Hero, another large green edged variety, is also figured. With two or three exceptions these varieties formed part of a large collection of all the leading varieties in cultivation, which were under my charge close upon fifty years since, and the following varieties that we grew then are still to be found in Turner's and Cannell's catalogues—namely, Waterhouse's Conqueror of Europe; Chapman's Maria and Sophia; Fletcher's Mary Ann and Ne Plus Ultra; Trail's Beauty, I think; Kenyon's Ringleader; Lee's Bright Venus; Taylor's Ploughboy; Heap's Smiling Beauty; Hepworth's True Briton; Litton's Imperator; Oliver's Lady Ann Wilbraham and Lovely Ann; Dickson's Prince Albert; Smith's General Bolivar; and last, but by no means least, old Summerscales' Catharina, raised near Halifax in Yorkshire. I think we grew all these in our collection, at all events their names are very familiar to me, but I am trusting entirely to memory, as I have no notes by me of so far back.

We grew Auriculas then in span-roof pits, the brickwork about 2 feet high, and filled nearly to the top with rough ashes, one side of the span with glass lights, the other with shutters; the latter on the north side in winter, and used for shading on the south side in the spring and summer, plenty of air generally, and not grown in too large pots, and potted firmly. The soil, good loam, decayed cowdung, a little leaf soil and some sand. No cod-dling, but just good attention in watering, ventilation, and the removal of any decaying leaves or growths. Mr. Sweet, the author of "The Florist's Guide and Cultivator's Directory," I have before referred to, writing in 1827 to 1829, gives the following instructions as to culture:—"We think there can be no doubt but a mixture of nearly one-half of fresh light loam, chopped up small, and mixed with fine white sand and rotten dung in equal proportions, would answer just as well as all the compositions recommended (by others). The dung we would advise to be spread out then to sweeten it with the air, to keep the soil light, so that the roots may find their way through it with ease. Another thing of consequence to the health of the plants is to have the pots well drained, that the water may pass away readily."

In another old book, "Maddock's Florists' Directory," by James Maddock, florist, an edition published in 1822, edited by Samuel Curtis, the following compost for Auriculas is recommended:—"One-half rotten dung two years old, one-sixth fresh sound earth of an open texture, one-eighth earth of rotten leaves, one-twelfth coarse or river sand, one-twenty-fourth peaty or mossy earth, one-twenty-fourth ashes of burnt vegetables;" and the author goes on to render this complicated arrangement of soil more complicated still by various other instructions, which in these days would frighten many a beginner.—W. D.

YELLOW TOMATOES.

VARIETIES of Tomatoes that produce yellow fruits do not as yet appear to have gained much ground in the estimation of the Tomato loving section of our countrymen, but unless I am much mistaken the prejudice against them is in a fair way to be dispelled. For many years Carter's Greengage and the Large Yellow were the only two. The former with me has always proved somewhat too robust and shy bearing under glass, but it succeeds better in the

open, and no fault could be found with the quality, nor are there any yet to supersede in that respect. It is admirably adapted for dessert purposes or eating uncooked just when ripe and fresh from the plant, but its size otherwise militates against it, especially when offered for sale. Connoisseurs are of opinion that it is the most pleasingly flavoured of all Tomatoes, and it may be they are right. Of the Large Yellow very little need be said. The only time I had it true to name was when seeds were had direct from America. It yielded very heavy crops in the open air, the fruit varying considerably in form, some being ill-shaped, others presentable, while all were of a clear orange yellow, and the worst in point of flavour of any variety of Tomato yet tried. Sutton's Golden Nugget was the next noteworthy addition to the list of yellow fruited varieties, and this, again, proves much more fruitful against an open sunny wall than under glass. Each strong dis-budded stem is capable of perfecting four or five large racemes of fruit during a favourable season, these being small, oval-shaped, and of a deep yellow colour. Unfortunately the quality is not first-rate, otherwise it would be admirably adapted for dessert purposes. Given the flavour of Greengage, or even of Perfection, and it would be a model dessert variety.

Carter's Blenheim Orange or Apricot was the next in the yellow fruited section I had an opportunity of trying, and on the whole it is an advance in the right direction. It is of moderately strong growth, sets freely under glass or in the open, the fruit varying considerably in form, some being round and smooth, and others corrugated somewhat after the style of Large Yellow. The fruit are very clear skinned, the colour being a bright yellow with a tinge of crimson on the upper surface, this giving the fruit a very attractive appearance, a well selected dish, or such as was shown at the Chiswick Vegetable Conference, being very handsome. If eaten directly the fruits are ripe the flavour is brisk and good, or equal to most of the red varieties, and that is saying a good deal for a yellow Tomato. No Tomato is improved by being kept till it is over-ripe, but the yellow varieties appear to lose what little acidity they possess the most quickly.

During the past season we had an opportunity of testing three other yellow fruited varieties in addition to those already named, each being perfectly distinct and more or less valuable. Daniel's Golden Eagle belongs to the small round-fruited section, the fruit being produced in great clusters, and of the size and form of an Orleans Plum. It grows strongly, fruits freely under glass and in the open, the colour being orange yellow, while the quality is fairly satisfactory, especially when the fruit is grown under glass. Yellow King was grown against a sunny open wall. In everything but its colour and quality it much resembles the Mikado, being of robust yet fruitful habit, the leaves being large and broad, while the fruit is borne in large branching clusters, and attains a great size. In common with the Mikado the fruit varies in form, some being large and ugly, and others smooth, round, of great depth, and of a clear canary yellow. It is, however, a little flat in flavour. From New York comes the finest if not quite the best flavoured of all the yellow varieties. Henderson's Golden Sunrise might be briefly described as being a yellow Perfection, and from an exhibitor's point of view it is a great acquisition. With us it was of moderately strong growth, and against a sunny wall was exceptionally prolific. When growing, and before the fruit commences to colour, it might easily be mistaken for Perfection. When ripe very handsome dishes of large, smooth, round, clear yellow fruit were gathered, and which in a collection of varieties would tell well. There is room, however, for improvement in flavour, more acidity being wanted.—W. IGGULDEN.

NOTES ON SHRUBS.

IN making standards out of old Laurel hedges and other shrubs, I cannot lay stress enough on the importance of having the old bushes cut before Christmas, and rather in November, if convenient. The second season after I began some experiments I was sadly put out, and lost a whole season, as well as a dozen fine Portugal Laurels, by cutting them down to the ground in April, which is a good time for general pruning them, and, as I then thought, a good time to cut them close to the ground also; but it is not so. It is true the stools will shoot out profusely enough, but not so vigorously as to form clean stems the first year, without a constant pruning-in of the side branches through the growing season, and even then they would look knotty for a long time; whereas, by cutting them late in the autumn, strong succulent shoots will rise as straight as ramrods, and as smooth as a gun-barrel. I was also thwarted about the time of ringing the bottoms, to facilitate the emission of roots. Ringing must be done at, or a little after, midsummer; for, if you ring them any time in April or May, and cover the cut parts, a communication is soon formed by a new layer of bark. It was on a large stool of the Lilac, with thirteen strong suckers, and another of the common Privet, with nine suckers, that I first discovered that spring ringing has little influence in arresting the circulation, and I was rather

surprised at the fact; but so it was, and, as the whole went through my own hands, I could not be mistaken.

Standard Lilacs are very handsome when you can have them without the wilderness of suckers which they are so prone to send forth, and they are the easiest of all to make, except the snowball bearing Guelder Rose, which will make the most handsome of standards imaginable, and, in good soil, an old plant cut down will throw up suckers 7 or 8 feet high, with hardly a side branch. This and the common Lilac often throw up suckers, without the old plants being cut down, sufficiently long to make these standards, but unless they are well disbudded, and rings of bark cut out as above, you can never divest them of their natural way of producing suckers.

The common Syringa (*Philadelphus coronarius*) is another deciduous, rambling shrub, as prone to give forth suckers as the Lilac, but, treated as standards, they make beautiful little trees, and the troublesome habit of producing a host of suckers is got rid of. They make elegant little trees, like standard Roses, for forcing, in the spring. There are several others of this genus which ought to be in every shrubbery, whether as standards or huge bushes. These flower early in summer, and there is another species that does not flower till July, and on that account is valuable, besides that it is a very handsome shrub; the name is *Gordonianus*. In their natural way of growing these shrubs are little better than a Raspberry bush; indeed they are more trouble than ornamental that way, but train them into standards, and one could hardly believe how well they look.

I had a handsome round-headed standard of the old-fashioned Fly Honeysuckle in bloom last May, and two young gardeners mistook it for *Weigela rosea*. Now, of all the weedy things in the world, this Honeysuckle is the queen or king, when allowed to ramble about after its own fashion. Therefore, if handsome manageable plants can be formed out of such materials, surely it is better to have a good selection of them than to have grass plots and shrubberies stuffed with Laurels and half a dozen other common things.

The common Berberry makes a handsome standard, but how seldom is it tried that way, being only allowed to make a thicket of scrambling suckers—choking up the shrubbery like other plants of the same habit. Yet when reared up on a clean straight stem, 5 or 6 feet high, it forms a very interesting little tree, and while in fruit particularly so. There is another form of it called the Asiatic Berberry, which, if possible, is a still more interesting little tree, with bunches of purple berries in the autumn. This Berberry was distributed all over the country, and recommended for underwood in plantations, to shelter and feed game, for which use it is well adapted, and no poacher could force his way through a thicket of it, for it spreads from the roots as much as the common Blackthorn. There is one more Berberry called *B. aristata*, a brittle-leaved Berberry, which, I think, would answer well as a standard, though I have not seen it grown that way.

The *Kerria japonica*, with double yellow flowers, which may be seen in every old garden in the country, growing after the manner of the Raspberry, would make a singularly beautiful standard if the stem did not rise above 4 or 5 feet high. The long slender branches first grow perpendicularly, and then bend over gracefully, like plumes of feathers, and, when in full blossom, the weight of the flowers weigh down the branches till their points nearly sweep the ground.

The genus *Spiræa* furnishes a host of plants, which produce suckers in such numbers as to destroy each other. I never tried them, nor saw them tried by others, as low standards, but I am quite satisfied a great reformation could be made in their culture by getting rid of their suckers, and rearing them on single stems from 2 to 5 feet high, according to the growth. *Spiræa Lindleyana*, treated as a low standard, would form one of the handsomest plants that one could place on the grass, and when not in flower might be mistaken for a Sumach tree.

Speaking of Indian shrubs, where could you find a better subject for a handsome standard than the "*Beautiful Leycesteria*" of Dr. Wallich—a softwooded shrub, which caused a good deal of heartburning in this country a few years since, having not proved what it was at first reported to be, and is already almost neglected. It is also one of the "ne'er-dowells," if allowed its own way of growth, but elevate its handsome foliage, and its pendant clusters of flowers and fruit on a clean stem 6 feet high, and, my word for it, you will create a sensation in your neighbourhood. It has no English name, but commemorates that of William Leycester, formerly chief judge at the Bengal Presidency.

But enough; a book might be written on the subject, and not exhaust it. These examples are taken from the most common shrubbery plants—the most difficult subjects to deal with in any other way, and the least elegant in their modes of growth, when allowed to take their natural turn. Although I would strongly recommend this way of managing such plants, it is more for the purpose of getting rid of their propensity for throwing up a wilderness of suckers than for torturing their heads into globular forms, like those of standard Roses. Indeed, I would rather let them take their natural way of growth, merely preventing any large limbs or shoots being formed to derange the balance of their growth; and this is easily effected by stopping over-luxuriant growths occasionally, and by pruning the shoots in winter according to their size and strength—that is, the very short branches to be only a little shortened—the middle-sized ones to have one-half or two-thirds of their length cut off, and the small spray either cut out entirely, or cut into a few eyes, according to their position, and not allowing any to cross each other. This, of course, would be modified according to the way they produced their flowers after their head was properly set off. What would our Gooseberry and Currant hedges be if they were allowed their

natural way of growth? Their suckers would spring up as profusely as those of the Lilac, and their fruit would be comparatively useless. It is much the same with many of our ornamental shrubs; their flowers are in many cases only an apology for what they might be under a better system. We find no difficulty in informing our fruit bushes without suckers, and with clean straight stems, and we prune their heads in different ways accordingly as they best flower and fruit, and that is all that I claim for our ordinary shrubs, which, as at present seen, are living examples of our negligence and bad gardening.

Standard bushes were made with great industry by our ancestors, and the thing is as old as the hills, but in those days they pruned and clipped them into all kinds of fantastic shapes, which is altogether foreign to our present taste. All that is original in this plan is the certain way of getting rid of their contending suckers and side branches at once and for ever from the collar of the plant upward to the head. You may cut off the head ten years hence, and I shall engage for it that the whole stem will die back inch by inch, without the power of forming a single adventitious bud. Plants like the Lilac, which are naturally stoloniferous, that is, having the power of growing shoots from the main roots, would, no doubt, produce suckers from these roots under such a severe trial, but certainly not one from any part of the stem itself.—D.

AMERICAN BLACKBERRIES.

I CANNOT congratulate "De Nova," page 509, on the information he has tendered as to the great success of the American Blackberries; neither is the appendage to his note convincing. I was more deceived with American Blackberries than I have ever been with the many thousands of plants I have bought. Their price was no sham, neither was their trial here. I have no doubt you will publish any notes you may receive bearing on the question, but I have ceased to regard one swallow as making a summer. The persistent way they have been recommended, and the many years they have been before the public, warrant me, I think, in arriving at the conclusion that they are not generally satisfactory, but I am open to conviction.—SOUTH WALES.

[When our friend said on page 487 that he had travelled "almost from the Land's End to John o' Groat's and not met with a good crop," we ventured to suggest he might have travelled by an express train; if so, we think he went past some good crops of cultivated Blackberries that we have had the pleasure of inspecting.]



DENDROBIUM THYRSIFLORUM.

We have found evil consequences result by moving this *Dendrobium*, *chrysotoxum*, *densiflorum*, and others of a similar habit of growth, direct from heat to a cool structure. Their growths should be thoroughly ripened before any attempt is made to remove them from the structure in which they have made their growth. Plants that have growths not yet ripe should be kept in heat until they are thoroughly matured. Those that have reached this stage may be allowed to become dry at their roots and then removed to an intermediate temperature for a few weeks, and finally to a light position, where the night temperature will not fall below 50°. When moved direct from a warm to a cool house the roots frequently perish, and any growths not thoroughly firm damp off at the base, the foliage becomes blotched, and the plants are disfigured. This will also take place under any circumstance if the temperature in which they are placed is low. Even in a temperature of 60° cold draughts must be avoided, the atmosphere being rather dry, the plants given only sufficient water to keep their pseudo-bulbs fresh and plump.

ZYGOPETALUM MACKAYI.

The flower spikes are rather stiff, but they are nevertheless very suitable for large vases. Its flowers are highly fragrant, and as they are produced during the winter it is worth growing in quantity where choice flowers are in demand at that period of the year. We find it invaluable for decoration in the conservatory, where its flowers last fully double the length of time they will do in heat. This plant evidently enjoys the cooler treatment of the conservatory for a few weeks, provided it is carefully treated, and grows afterwards with increased vigour. While in this structure they should be arranged where cold draughts will not strike upon them and kept rather dry at their roots; in fact, little water will be needed, but when it is necessary it should not be of a lower temperature than 60°.

LYCASTE SKINNERI.

We are removing the whole of these to the coolest end of the *Odontoglossum* house, except a few plants that made their growth

early and are already showing flowers. These plants are often kept too dry during the season of rest, and the effect of such treatment is visible the following year by the plants decreasing in strength. Considerably less water is needed than during the season of growth, but we never allow the soil about their roots to become thoroughly dry. When in flower these plants can be used in the conservatory or even in dwelling rooms without the slightest injury. When used in the conservatory, it is necessary to elevate this plant well above surrounding objects, or the beauty of its flowers is hidden.

THUNIAS.

These should be sufficiently ripe for storing under the stage or placing on a shelf where they can be kept perfectly dry in a temperature of 45°. To do them well they enjoy a complete season of rest, and grow with great vigour afterwards. Plants that have been grown in a moist shady atmosphere will need considerable care to prevent their decay. It is not wise to place plants of this nature in too low a temperature, or they will be certain to suffer. They should be kept a little warmer and in a dry atmosphere. It is also necessary to examine them frequently.—ORCHID GROWER.

CYPRIPEDIUM NIOBE.

THIS hybrid was shown by Messrs. J. Veitch & Sons at the last meeting of the Royal Horticultural Society's Floral Committee (Dec.

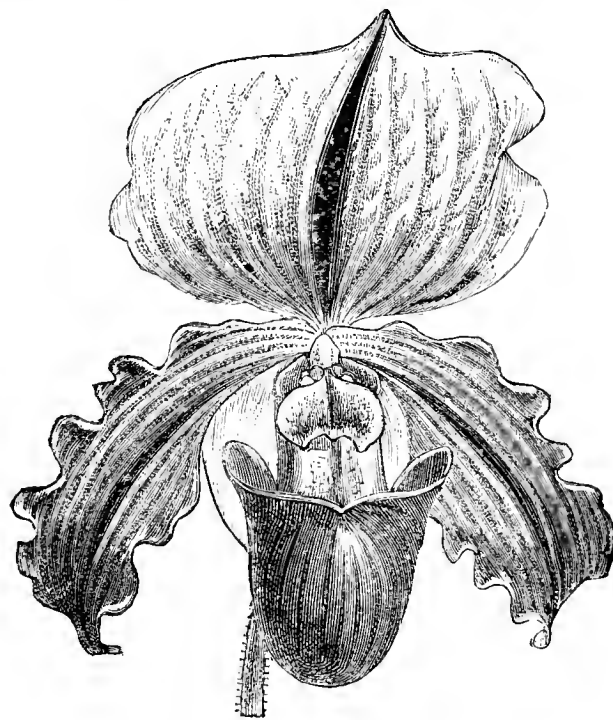


FIG. 67.—CYPRIPEDIUM NIOBE.

10th), when a first-class certificate was awarded for it. The plant was obtained from a cross between *C. Fairrieanum* and *C. Spicerianum*, very interesting and distinct, showing at a glance the influence of the two parents. The dorsal sepal is much like that of *C. Spicerianum*, but somewhat more green at the base, veined with deep purple. The petals are undulated at the margin and strongly recurved, just like *C. Fairrieanum*, green, and a peculiar reddish brown tint. The lip is small, neat, and of a greenish hue.

CELOGYNE CRISTATA.

THOUGH this is one of the easiest of all Orchids to grow and flower, it does not always follow that everyone succeeds with it. I know a large number of plants in various places where flowers are produced in sparse numbers, and yet the plants appear to be in good health. The variety has a bearing on this point, as I find the common sort, which yields four or five blooms on a spike, by far the most floriferous, the longer spiked Chatsworth variety flowering much less profusely, and in the aggregate yielding a smaller number of blooms.

I began with a small plant a dozen years ago, each was shortly after divided into four, and the pieces encouraged to grow. The last time these were repotted was six or seven years ago, when the plants were spread out on elevated mounds in large pots, and since then they have only had the pseudo-bulbs thinned, and occasional dressings of fibrous peat or sphagnum applied. These plants grown quite close to the glass in an ordinary plant stove flower with great profusion. The larger of the four I estimate will this season yield 1200 blooms, which at the low average of 1d. each

means £5 as the produce of one plant, while, strange to say, the plant itself if put in the market would not fetch that price. When the spikes are expanded and the flowers open it does the plants no harm, but rather, I imagine, is to their benefit to keep them in a cool and dry structure, giving little or no water meantime. The flowers keep thus much longer in good condition, and the breaks, though later, come more evenly and in greater number than if kept on in the stove. Before returning to the stove the foliage and pseudo-bulbs are thoroughly washed, a white scale appearing in small numbers, and this is the period when cleansing can be pursued with the greatest success and with the least chance of damage to the plants. I have seen plants very much damaged by the minute Orchid thrips, but it is only where a very high temperature and a dry atmosphere is kept up that this destructive pest attempts to gain a footing, and as it is on the young growths that thrips congregate the damage they effect is of a very serious nature. Whenever they are seen, or rather the blackish appearance of the pseudo-bulbs and foliage which results from their attention, for the insects themselves are not easy of detection, the sponge must be brought into immediate and unremitting use.

The kind of soil this *Cœlogyne* appears to do best in is one of best fibrous peat, sphagnum, and sand, with free drainage. In potting it is best to give good shifts, and allow the plants to remain undisturbed for a few years, as my experience shows that they flower best when undisturbed at the roots. Our plants are freely watered from the time the growths are well started until the flowers are open, when the water pot is dispensed with for a month or two. I have tried plants in a cool house, but results have been so much inferior that all our stock is now grown in a stove temperature.—B.

THE CLYDE DISASTER.

I HAVE much pleasure in informing you that this fund amounts to £450, including the munificent donation of 20 guineas from G. N. Stevens, Esq., Tulse Hill; 3 guineas from Messrs. Hurst and Son; 1 guinea from Mr. A. Methven, gardener to Baroness A. Rothschild, Geneva, and other smaller sums. As we have another and final Committee meeting on Friday next, I cannot foreshadow either the distribution of the money or the thanks to the *Journal of Horticulture* for kind co-operation with us, but will give you full particulars next week.—FRED. HORSMAN, *Hon. Sec.*

BAMBOOS.

THE *Kew Bulletin* for December contains several interesting chapters, and amongst them is one comprising a report of a visit to the Riviera, and notes on the tropical and subtropical plants there seen. The remarks on Bamboos are here reproduced.

After the Palms the most tropical feature in the gardening of the Riviera is the Bamboos, which are largely used in the composition of the best gardens, both public and private. To a northern gardener the elegance and grandeur of some of these Bamboos constitute some of the chief charms of the Riviera. Some of the specimens are of very large dimensions, as for instance one of *B. vulgaris*, in Baron Vigier's garden at Nice, which measures 40 feet through in every direction, and is 35 feet high. It contains hundreds of stems or canes, each 3 inches in diameter, and straight and smooth as a gun barrel. It is planted on one side of the lawn near the house. As fences, screens, and boundary lines the Bamboos are frequently used, and nothing could be better, as they are quick growers and evergreen. All the kinds noted were in splendid health, and from the manner in which they had taken possession of the ground it was evident that their requirements are abundantly satisfied. The finest and healthiest examples are in wet ground, often on the edge of water. Most of them are heavily manured annually.

In England we have not hitherto made the most of this beautiful family of plants, many of which may be grown out of doors successfully in all the milder parts of the country, whilst in large conservatories, where they would get protection from cold in winter, a still greater number would be found to thrive. That they are much superior to many of the plants at present used for such positions must be evident to anyone acquainted with the extraordinary elegance and grace of a well-grown Bamboo.

The Kew collection comprises over fifty named sorts, a few of which are tropical, whilst the bulk of them are either quite hardy or require only the temperate conditions supplied by the winter garden.

The names of Bamboos are as confusing as are those of garden Palms. In one as in the other it is only very rarely that the plants flower under cultivation, so that many of the names which are given by nurserymen can only be problematical. For garden purposes this would not be of much consequence, the difficulty arising only when growers do not agree as to what names the plants shall bear.

Now that so many kinds of Bamboo are in cultivation under favoured conditions on the Riviera it would be worth while to watch them, and as they flower get them properly determined.

It is generally supposed that nearly every member of the Bamboo order perishes immediately after flowering. There are many recorded

instances of this having occurred. But with regard to a considerable number of the species the exact flowering age has not been ascertained. Some are said to grow forty years before flowering. Another remarkable fact is that all the plants of one generation flower at the same time, no matter how different may be the conditions in which they happen to be placed. I was told that all the plants of *Thamnocalamus Falconeri* (*Bambusa gracilis*) of the Riviera flowered and died last year. Numerous seedlings have since sprung up about the old stools, but the latter certainly all perished. This proved to be the case with a plant of *Arundinaria falcata*, which flowered at Kew in 1886.

The following are the kinds noted. The names in brackets are what I consider to be the correct names, according to Munro, &c.

B. aurea, Sieb.—A Japanese species, now well known in gardens. It was in cultivation at Kew in 1866, and is here still. It is one of the most elegant of the hardy Bamboos. In the gardens of the Acclimatization Society at Hyères there is a magnificent specimen with stems 25 feet high, and not more than 1½ inch in diameter. The nodes are prominent, and less than 4 inches apart on the lower part of the stem. When ripe the stems are of a rich greenish-yellow colour. The leaves are small, with a distinct petiole.

B. gigantea (*Dendrocalamus giganteus*, Munro).—The largest of all the Bamboos. The specimen at the Palm house at Kew produces stems 40 feet long and 12 inches in circumference, but wild plants have stems as much as 26 inches round. In the garden at Villa Valetta, Cannes, there is a very fine mass with stems 30 feet high and 4 inches in diameter. It is a native of India.

B. gracilis (*Thamnocalamus Falconeri*, Hook. f.).—A slender and somewhat fragile stemmed plant from the Himalayas. It is not uncommon in gardens, as it makes an elegant pot plant. It was plentiful on the Riviera last year, when all the plants flowered. There is a plant at Hyères called *B. gracilis rustica*, in which the leaves are narrow, with incurved margins.

B. Mazellii, Hort.—A fine mass at Hyères and Cannes. The stems are 25 feet high, bright yellow when mature, the nodes prominent and close together at the base, the branches loose, and the leaves short and twisted on the petiole. It looked suspiciously like *B. aurea*.

B. Metake (*Arundinaria japonica*, Sieb. & Zucc.).—Much used on the Riviera, where it is as ornamental as it usually is in England. It is always strongest when grown near water, although it grows well in an ordinary border. At Kew there is a specimen 12 feet high. According to Munro it is known as *B. mitis* in the gardens of Paris.

B. mitis, Poir.—A magnificent specimen on the lawn at Villa Valetta, the stems 30 feet high and 3 inches in diameter at the base, becoming shining yellow with age. The nodes are prominent, and about 9 inches apart; the leaves short and not dense. There is a small plant of it at Kew, obtained last year from Lavallée's collection. It is said to be from Cochin China.

B. nigra (*Phyllostachys nigra*, Munro).—A clump of this, 20 yards through, and rising to a height of 30 feet, in the garden of Baron Vigier at Nice, was one of the most striking objects seen on the Riviera; thousands of naked shining blackish purple stems rising from the lawns, and losing themselves in the mass of green foliage above. This species is quite hardy in England, but it does not grow to its full height except when in a very sheltered situation or under glass, as at Chatsworth, where in the large conservatory it is exceedingly handsome.

B. quadrangularis, Fenzl.—A very interesting species from China, with stems 15 feet high by 1 inch in diameter, and distinctly quadrangular; the nodes are armed with decurved teeth-like spines. These dimensions are of a clump 6 feet through on one of the lawns at Villa Valetta. There are plants at Kew, both outside and in the Temperate house. It is a handsome and distinct Bamboo. For an account of it see an article in *Nature*, vol. xxxii. (1885), p. 391.

B. Quilloi.—I cannot find any information with regard to this plant. Carrière described a Bamboo in the *Revue Horticole* under the name of *B. Duguilloi*, but Munro appears to have referred this to *Phyllostachys puberula*, included by him under *P. nigra*. The plant known under the above name is represented at Hyères by a large clump with stems 25 feet high, 1½ inch in diameter, bright yellow, with a faint tendency to become quadrangular. We have a plant of it at Kew. It is a most elegant Bamboo.

B. scriptoria, Hort. (*B. nana*, Roxb.).—I believe that *B. scriptoria* of the Riviera gardens is merely a form of the well-known Chinese *B. nana*. It has the same dense habit, thin green canes, and small leaves with the under side glaucous, which characterise *B. nana*. In some of the specimens seen the stems were 9 feet high. A variegated form called *B. scriptoris* is the same as is grown at Kew as *B. nana variegata*.

B. Simoni, Carr.—A beautiful Bamboo, and perfectly hardy in England, as is shown by the fine example in the Cambridge Botanic Garden, and by the plants at Kew. It is also very handsome at Hyères, where the canes are 15 feet high, quite smooth and cylindrical, less than an inch in diameter, and coloured deep olive green. This plant is worth the attention of English horticulturists on account of its elegance and hardiness, and its evergreen character.

B. sulphurea.—Apparently a garden name for a very handsome Bamboo, with stems 18 feet high, 1½ inch in diameter, the nodes 9 inches apart, and the internodes deeply furrowed on one side. When mature the stems are a rich orange yellow colour. There is a fine mass of it at Villa Valetta. It is also in the Kew collection.

B. verticillata.—This is probably the "Male Bamboo" (*Dendrocalamus strictus*, Nees), a common Indian species, the stems of which,

According to Munro, are universally used as lance-staves. The specimens seen were large clumps, the stems 20 feet high, 1 inch in diameter, the nodes at the base a foot apart, the upper ones bearing each a crowded cluster of short leaf branches. When old the stem is bright yellow. It is a well marked handsome Bamboo.

B. violascens, Carr.—A beautiful Chinese Bamboo, which was introduced into Jardin d'Acclimatation in 1870, in the branch of which at Hyères a fine clump was noted. The stems are 10 feet high, three-quarters inch in diameter, much branched towards the top, the internodes somewhat flattened on one side, and striped with violet on a greenish yellow ground. The leaves are glaucous on the under side. Young plants of it are in the Kew collection.

B. viridi-glaucescens, Hort.—One of the handsomest of cultivated Bamboos. It is quite hardy in England, and in France it is one of the commonest. It grows very rapidly, has handsome foliage, transplants easily, and a first-rate pot plant. It is frequently used in France for the embellishment of entrance halls, and is very effective. The stems of the Riviera plants were over 20 feet high, very slender, the nodes about a foot apart, dark green when young, bright yellow when mature.

B. vulgaris, Wendl. (B. Thouarsi).—Some astonishing large healthy specimens of this well-known species were met with. Apparently it does not require tropical treatment such as it usually gets. At Hyères, Cannes, and Nice it is especially fine; in the last named place measuring 40 feet through, and the canes 35 feet high. The plant in the Palm house at Kew must be thirty years old; it has not yet flowered.



THE STANDARD ROSE STOCK FOR THE FUTURE.

FOR a number of years the culture of Roses has been increasing to such an extent that nurserymen began to be at a loss whence to obtain stocks for dwarf Roses as well as for standards. The custom has become general to grow seedlings of *Rosa canina* as well as the Manetti, polyantha, and other kinds for this purpose; but with all these there are so many well known inconveniences that it would be most desirable to find a more suitable type for a stock. Everywhere nurserymen have been trying to procure such a species, and we also have been experimenting for upwards of ten years, choosing especially Central Asiatic kinds for the purpose of having a stock which would be perfectly hardy. The beautifully straight stems nearly without thorns of *Rosa laxa*, *Retz*, brought us to the idea that this species would answer our purpose. Our attention once fixed upon it, we soon found other qualities, which will put it above all competition for this special purpose.

While others are very troublesome through the numerous shoots arising directly from the roots, *Rosa laxa* never forms any suckers. The stems are not only perfectly straight and nearly without thorns, but they scarcely branch out at all, and, moreover, they are very hard and firm, containing very little pith; for this reason they will withstand any amount of frost and proved perfectly hardy without any protection even in the severe winters of 1870 and 1879 to 1880.

Another very important thing is the relatively short season of growth of *Rosa laxa*. While *Rosa canina* and its congeners keep growing late in autumn until frost forces them to rest, *Rosa laxa* will finish growing by the middle of September. In consequence the Roses budded on it rest in good time, and so to ripen their wood thoroughly, so they will resist frost much better and become far more hardy when budded on *R. laxa*. Roses forced to rest early in this way will of course be excellent for forcing purposes. Any kind of Roses takes easily when budded on *Rosa laxa*. They will join firmly, while for instance Roses budded on the Manetti will sometimes fall off again. We possess a variety of standard Roses as well as dwarf ones budded two and three years ago on *Rosa laxa* so as to be perfectly able to judge.

Growing standards of *Rosa laxa* is of the very easiest description. The plants are to be treated just like other nursery stock, but not to be cut back until the growth to be used for a stem is formed and has attained its height. We possess large pieces of land occupied by such standards of *Rosa laxa*, and to a grower of Roses it would be a pleasure to walk through them and to see the clean straight rows of standards. While such pieces of land planted with other stock Roses are hardly to be kept clean on account of the suckers and branches and rather look like wilderness than an orderly nursery piece, these are as clean quarters of the nurseries as any, and we can comfortably walk through the rows. All these are qualities which will put *Rosa laxa* above any other Rose for a stock. Besides, it is an ornamental shrub, resembling somewhat *Rosa pomifera*.—OTTO FROEBEL.

TEA ROSES FOR EARLY FLOWERING.

These have frequently large quantities of leaves at pruning time, and for years all healthy ones were preserved and allowed to fall naturally, which they do in a short time after the plants have started into growth. Frequently these old leaves are infested with red spider, aphides, or mildew, and remain upon the plants sufficiently long to give the culti-

vator some trouble. For the past two or three years we have removed the foliage during the operation of pruning, the house is also thoroughly fumigated two or three times in succession before the plants are started into growth. We have not observed any ill effects resulting by the removal of the leaves. It is a certain method of clearing out insects and the destruction of any spores of mildew that may still be upon them.

RENOVATING PLANTS IN POTS.

Where plants have been forced for some years and subjected to repotting annually, there is certain to be some that have failed to do satisfactorily. Whether these are Teas or H.P.'s the best method of restoring them again to health and vigour is to give them a season's rest—that is, allow them to come forward steadily and almost naturally in cold frames. Plants in this condition should be turned out of their pots and the old soil carefully picked from their roots. If the soil about them is not thoroughly sweet, the whole should be removed. Place the plants in much smaller pots, according to the size of the plants, in a compost of good loam, one-third leaf mould, one-seventh of manure, and a liberal quantity of sand. In reducing the roots all the fibres possible should be retained and the plants placed in cold frames. It is wise to plunge the pots to prevent evaporation, and thus avoid having to water them. The majority of the plants given this treatment and carefully watered during the early months of the year, will start strongly and grow vigorously afterwards. It is useless to shake them out and then force them into growth; it would ruin them. They will flower just before flowers can be had from those in outside borders, and will prove very acceptable at that season of the year. It will be necessary to repot them directly they have flowered, and therefore small pots in which to start them is strongly advised.—NORTHERNER.

MANNERS AND CUSTOMS—A CATALOGUE COMMENTARY.

(Continued from page 491.)

Annie Wood (Verdier, 1866).—Here we have a Rose with habits and manners (fortunately) peculiar to itself. A fine strong grower, with fair foliage, liable to mildew but not much injured by rain, and a very free bloomer. A great quantity of buds form on each stem; the top bud of all, which one would naturally reserve, is nearly always cracked, hollow, and distorted, before it is much bigger than a thimble, and sometimes has a great green pip in the centre. You may search for the best shaped bud all over the stem, and do away with all the others for its sake. Even then, nine out of ten buds will show a great eye before they are more than half expanded, and the tenth will do it soon after being cut. You make up your mind to discard the sort altogether; but, just at the close of the season a beautiful bloom makes its appearance on a shoot you had not noticed, with brilliant colour and good imbricated shape; and the plants are spared to serve you just the same trick another season.

The title of my paper being what it is, it seems impossible to avoid sooner or later lugging in the time-honoured anecdote of the traveller, who, describing the "manners and customs" of some native tribes he had been visiting, was constrained to dismiss one of them with the terse remark, "Manners none—customs disgusting." If it be possible to say anything so bad of a Rose, I am doubtful whether I shall find any more worthy candidate in the N.R.S. catalogue than *Annie Wood*.

I see that a Rose called "Professor Edward Regel," of which I know nothing, is stated to be "in the way of" *Annie Wood*. If it be too late for the Professor to mend his ways, I should strongly advise his friends to keep his unfortunate predisposition in the dark.

Baron de Bonstettin (Liabaud, 1871).—A stronger grower with good foliage, liable to mildew and to be injured by rain. Very early; one of the first to show flower buds. A poorly shaped flat bloom at the best, and but a small proportion of them come good, but a beautiful dark colour, being perhaps more "velvety" than any Rose. Requires a hot season, and yet very liable to "burn" in a bright sun. Is held by the N.R.S. to be identical with *Mons. Boncenne*. With me the Baron has seemed rather the better grower, but that may have been chance. Fairly free blooming, and fair size, but does not last well, and is not much use as an autumnal.

Baroness Rothschild (Pernet, 1867).—A Rose by itself, with very distinct manners, belonging to all its family, which is not large as yet. Of "robust" habit—i.e., with comparatively short, thick, stumpy, upright, stiff wood, and grand foliage right up to the blooms, which are generally produced singly; not liable to be much injured by mildew, red rust, or rain. The blooms generally come well, of what the N.R.S. calls the cupped shape; but I should have thought the perfect form was globular, and I have never had it of real cupped shape, like *Anna de Diesbach* or *Coupe d'Hébé*, without a very visible eye. One of the very best of autumnals, and of the fullest size, but quite scentless. A party of villagers came to see my Roses one day, and one good dame who was behind all the others stooped to catch the perfume of a fine bloom of the Baroness, which had attracted much notice. She was disappointed, but saw the reason at once. "Ah! they've sniffed all the scent out of this 'ere one!" Is rather wanting in fulness of centre, apt to open quickly in hot weather, and must be cut small for exhibition. It may be only fancy, but I have half suspected deterioration in this fine Rose of late years; it seems less fine and less lasting than it used to be. Is much inclined to sport to white. *Mabel Morrison* and *White Baroness* were comparative failures, but *Merville de Lyon* has achieved a great success. *Mabel Morrison* has, however, amply atoned for personal failure by its wonderful progeny, *Her Majesty*. I do not know whether *The Puritan*, a new Rose of 1887, too young to have its fortune told, but apparently of bad manners in the open, is also a white descendant,

but it looks something like it. Baroness Rothschild is likely to continue long in favour, even if it has slightly deteriorated, for it is of strong, hardy constitution, and does fairly well on its own roots.

Beauty of Waltham (W. Paul, 1862).—Only fair in growth and foliage, not particularly liable to mildew or to be injured by rain. The blooms seldom come falsely shaped, the form being typical. The N.R.S. catalogue calls it imbricated, and the raiser cupped; my blooms never come in either of these forms, but the petals are very closely curved inwards in the centre in a manner which proclaims the variety at once. Like some others somewhat of this shape, and those of the pointed form, this Rose has the good custom of closing in and guarding its centre more tightly in hot weather, when it is most needed, than at other times. I saw, by-the-by, the other day, a line of the Poet Laureate's misquoted in some paper (not this Journal, I should think), to read, "Tiptilted like the petal of a Rose." It should, I think, be "the petal of a 'flower.'" I never saw a Rose petal whose shape could in any way suggest a turned-up nose. A free bloomer, good in lasting qualities, and as an autumnal, but not of the largest size. Has produced a seedling, Lady Arthur Hill (Dickson, 1889), of novel colour.

Benoit Cmte (Schwartz, 1883).—See Alfred Colomb.

Black Prince (W. Paul, 1866).—Of fine growth and foliage, and occasionally gives quite a good dark bloom, but so very rarely that I am forced to look upon it more as a pretender than a Prince.

Boule de Neige (Lacharme, 1867).—A cross with the Noisette race, of good growth and fair foliage, not liable to mildew or much injured by rain. The flowers do not always come right, they should not be thinned, or the probability of distortion is increased. N.R.S. catalogue gives the shape as "open cupped," but with me they are imbricated, perfect rosettes in every sense. A lovely pure white charmingly shaped Rose, but it is an abuse of even catalogue-English to call it medium sized, as it is impossible to deny that it is very small. Exhibitors are sometimes accused of caring only for big Roses, but I am sure there are some who have wished that *Boule de Neige* was three times the size it is, and it would then be not too large, for we should certainly have nothing to equal it for show as a white H.P. Stout in petal, and lasting in bloom, very free flowering, and good as an autumnal.

Camille Bernardin (Gautreau, 1865).—Fine growth and foliage, but the wood is not very stiff, and the blooms are sometimes pendent. Decidedly liable to mildew, but will stand some rain. The majority of the blooms come well, and are good in size, petal, fulness, and shape. Not imbricated with me, but of pointed centre. Lasting and fragrant, a free bloomer, and a good autumnal. A Rose of good constitution, most useful and reliable for garden or show purposes.

Captain Christy (Lacharme, 1873).—Of the robust habit of growth, but the wood is unique, and something like that of the Victor Verdier race. Splendid foliage, most lovely when young in the spring, coming well up under the flower. Does not mind mildew much, and though not liking rain, can put up with it better than many of the light coloured Roses. The midsummer blooms are apt to come divided and badly shaped, particularly on strong shoots, but the good ones are fine in petal and fulness, fair in lasting qualities, and of the largest size. A fairly free bloomer, and as an autumnal simply the best H.P. we have, for flowers in September or even October are often better than those of the summer crop. A grand Rose if "well done by," grown on the Briar on rich strong soil, but rather dainty, and does not like the Manetti stock, or being starved.

Charles Lefebvre (Lacharme, 1861). synonyms, Marguerite Brassac and Paul Jamain.—Strong growth, with stiff smooth wood and fine foliage. The secondary shoots are much stronger than the early ones, and so with me on cut-backs the latest blooms of the first crop are generally the best. Rather liable to orange fungus and red rust, but not much to mildew, and can stand rain pretty well. Comes well as a rule, good in petal, centre, and size, lovely in colour, and beautifully smooth in general appearance. Open semi-imbricated shape, which is very effective, but not a good form to last. A free bloomer and good autumnal. This is the G. O. M. of crimson Roses. Longfellow's "Hiawatha" metre always seems to me to suggest

Charles Lefebvre, the
King of Roses.

Comtesse de Serenye (Lacharme, 1874).—Fair growth and foliage rather liable to mildew, and cannot stand rain at all. A free bloomer and good autumnal. A Rose that can be very fine when it chooses, but with awkward manners, for this is one of the coarse varieties, too full in petal, in regard to which the stronger you grow them the worse they are. On a maiden growth, especially if the buds be thinned, the survivor will often be a most unsightly object, and indeed it is very seldom that a large bloom will come without distorted shape; but on the side shoots of a cut-back in a dry autumn flowers of a beautiful "globular imbricated" shape may be got of good lasting qualities.

Countess of Oxford (Guillot, 1869).—One of a large family of smooth-wooded Roses, all, I believe, descended from Victor Verdier (1859). Some of them, such as the one under notice, *Pride of Waltham*, and *Marie Finger*, are quite first class. The different members of the family have the same or similar manners and customs. They have characteristic smooth wood and good foliage, which is most lovely in the early spring, not suffering much from mildew, but very liable to red rust, the early shoots being often quite bare of foliage by the end of August. They do not like light soil or the Manetti stock, but the flowers will stand rain fairly. *Countess of Oxford* is good in petal, fulness, and shape, and of the largest size, sometimes rather coarse. Fairly lasting in shape, but the colour soon gets dull, and is much

lighter on weak plants; a fairly free bloomer, but not so good an autumnal as some of the family. Decidedly liable to sport, *Pride of Reigate*, *Pride of Waltham*, and, I take it, *Monsieur Trieror*, a new Rose of 1888, having already appeared. A white sport of this variety, of which *Pride of Reigate* seems to give us hope, would be an acquisition.

Countess of Rosebery (Postans, 1879).—Of strong growth, with distinct smooth wood and good foliage. A little liable to mildew, but not much injured by rain. The blooms come pretty well, but the shape is not always very clearly defined. Fine smooth petals, full and of fair size. Only fair in freedom of bloom and as an autumnal.—W. R. RAILLEM.

(To be continued.)



EVENTS OF THE WEEK.—To-night (Thursday) the National Chrysanthemum Society's dinner takes place at Anderton's Hotel, Fleet Street, at 6 P.M. sharp, and a large attendance is expected. Many are now preparing for a holiday period, but a time of rest and enjoyment to some necessitates considerable activity and work on the part of many. A visit to the markets in London or in any large town gives a good idea of the business transacted at this time. Covent Garden Market in particular is crammed with all the good things of the vegetable world for consumption and ornament, and next Saturday will probably be a busy day. On Monday, Tuesday, and Boxing Day the market will be open, as the demand for cut flowers is great as this time of year.

— ROYAL BOTANIC SOCIETY.—The following are the arrangements for 1890:—Spring Exhibitions, Wednesdays, March 26th, April 23rd, gates open at 2 o'clock; Summer Exhibitions, Wednesdays, May 14th, June 11th, gates open at 2 o'clock; evening fête, probable date Wednesday, July 2nd, 8 to 12 P.M.; promenades, Wednesdays in May, June, July, commencing May 7th, exhibition and fête days excepted; lectures, Fridays at 4 P.M., May 9th, 16th, 23rd, 30th, June 6th, 13th; general meetings, for election of new Fellows, scientific discussions, &c., Saturdays, at 3.45 P.M., January 11th and 25th, February 8th and 22nd, March 8th and 22nd, April 12th and 26th, May 10th and 31st, June 14th and 28th, July 12th and 26th, November 8th and 22nd, December 13th; anniversary, Monday, August 11th, at 1 P.M.

— THE weather in the south of England has been variable during the past week, but generally dull, with occasional rain. The temperature is much higher, with S.W. winds.

— THE WEATHER IN THE NORTH.—For the past fortnight the weather in Perthshire has been very variable, showery evenings and frosty mornings repeatedly alternating. Frosts of from 2° to 8° have occurred, but generally mild, frequently drizzly, weather has prevailed.—B. D.

— A NEW NATIONAL CATALOGUE.—It is proposed that a new edition of the National Chrysanthemum Society's catalogue be issued as early as convenient in the coming year. This work will be aided materially if catalogues containing novelties for the select lists, with all corrections and additions, be forwarded at once to Mr. Lewis Castle, Hotham House, Merton, Surrey, and to Mr. George Gordon, 1, Stile Villas, Wellesley Road, Gunnersbury.

— WE are desired to state that the variety of *ONCIDIUM FORBESI* shown at the last meeting of the Royal Horticultural Society was from the collection of E. G. Wrigley, Esq., Victoria House, Dukinfield, Cheshire.

— A HORTICULTURAL Association entitled the CRIFFEL DISTRICT HORTICULTURAL ASSOCIATION has been formed for the parishes of Kirkbean, Newabbey and Southwick in Kirkcudbrightshire. The proprietors in this district have promised liberal support, and a large number of members have been enrolled, rules drawn up, and office-bearers appointed: these being President, Mr. J. Gibson, Sallowgairn; Kirkbean; Vice-Presidents, Rev. W. J. Rae Mainsiddle and Mr. J. Curr, Kindar Lodge, Newabbey; Secretary, Mr. S. M. Smith, Schoolhouse, Kirkbean; Treasurer, Mr. S. Arnett, Carsethorn, Kirkbean, and a representative Committee including the gardeners on the various

estates. The Association begins well and is a proof of the increasing interest in horticulture throughout the kingdom.—S. A.

— IRON EDGING FOR BEDS.—A correspondent, "T. F.," will be glad to be informed where the iron edging that is used in the Paris parks and gardens, instead of tiles, can be obtained in this country.

— WE are desired to state that MR. ROBERT SYDENHAM of Birmingham has added a seed department to the great business he has established in bulbs.

— GARDENING APPOINTMENT.—Mr. C. Roberts, for the past seventeen years head gardener and general manager at Highfield Hall, Leek, has been appointed head gardener to the Right Hon. Lord Hill Trevor, Brynkinalt, Chirk, Ruabon.

— THE SACRED LILY OF CHINA.—Just as we are preparing for press we receive from Messrs. Barr & Son bulbs of the floriferous Narcissus that is grown under the above and other fanciful names in China and Japan. Instructions for growing and flowering the plants in bowls accompany the bulbs distributed, which will probably be tried in many British homes.

— THE "WEEKS" POCKET BOOK.—Annually the great Chelsea firm of Messrs. J. Weeks & Co. distribute pocket books to gardeners and friends. We have been favoured with a sample of one of these handy pocket companions, and reciprocate the good wishes with which it is accompanied. Compact and substantial, these books will be found serviceable by the recipients of them throughout the coming year.

— OUTDOOR TOMATOES.—On page 436 "J. H. W." gives a very interesting article on the above, and I fully coincide with all he says especially in respect to restriction of roots. We had some plants placed in exactly the same position—namely, in front of a Melon house, the only difference being that ours were in 10-inch pots, nailed up to the wall in the second week of May. When the fruit was set we top-dressed with a mixture of loam and cow manure, and also gave plenty of liquid manure, and they finished a fine crop of fruit off.—R. KIRBY, *Oulton Hall*.

— POINSETTIAS FLAGGING.—As bearing on your reply to one of your correspondents in last week's Journal please permit me to say that searing the cut ends of the stems with a hot iron is an excellent preservative of the freshness of the bracts. This should be done as soon as they are cut. By inserting a poker in the bothy or other fire a man can do a lot in a short time. We have practised this method for some years with our large supplies, and have kept the bracts fresh for a fortnight sometimes. The freely exuded milky juice if not prevented exhausts the life out of them shortly. We used to dip the cut end in a small pot of dry silver sand. This will check it, but not so well as searing them.—H. J. C., *Grimston, Tadcaster*.

— POTATOES IN AMERICA.—It would appear from the following that the Potato supply of America is inadequate for consumptive demands, and that exports from Europe are considerable:—"According to the estimates of Mr. J. Dodge, statistician of the Department of Agriculture, the total area in Potatoes this year was 2,500,000 acres. The crop of 1888 was large, and prices ruled low. The average yield per acre for 1889 is only about 76 bushels. The imports of Potatoes for the year ending June 30th, 1888, were 8,260,000 bushels; 141,000 from Germany, 1,453,000 from England, 2,895,000 from Scotland, 617,000 from Ireland, 2,899,000 from British North America, 155,000 bushels from all other sources.—(*American Cultivator*.)

— TOMATOES IN AMERICA.—The Cornell University of New York, through its Agricultural Experiment Station, has recently issued a bulletin giving the results of many important experiments in Tomato culture. The following is a summary of points established:—The tests indicate that poor soil may tend to render fruits more angular. Varieties of Tomatoes run out, and ten years may perhaps be considered the average life of a variety. The particular points at present in demand in Tomatoes are these: Regularity in shape, solidity, large size, productiveness of the plant. The ideal Tomato would probably conform closely to the following scale of points: Vigour of plant, 5; earliness, 10; colour of fruit, 5; solidity of fruit, 20; shape of fruit, 20; size, 10; flavour, 5; cooking qualities, 5; productiveness, 20. The following recent introductions appear to possess merits for market: Bay State, Atlantic, Brandywine, Jubilee, Matchless, and perhaps Lorillard, Prelude, and Salzer. Particularly valuable for amateur cultivation: Dwarf Champion, Lorillard, Peach, Prelude.

— THE METEOROLOGICAL REPORT OF THE STRAITS SETTLEMENTS has been published for the year 1888, being the fifth year in which meteorological observations in the colony have been made the subject of a general systematic report. The temperature of the air ranged between 67.2° and 96°, and solar radiation varied from 81° to 179°; the lowest temperature on the grass was 61°. Rainfall observations were received from forty-one stations. The annual amount differs considerably in the various provinces, the mean of the stations ranging from 65.6 inches in Singapore.—(*Nature*.)

— EARLY ROMAN HYACINTHS.—The value of these charming flowers can scarcely be over-estimated at this season of the year. For wreaths, bouquets, buttonholes, and vase decoration they are simply invaluable, and for arranging with other plants in pots for house embellishment we find no other white flower to compare with them from the present time till Christmas. For the latter purpose we pot five bulbs into a 5-inch pot, keep them plunged in ashes in the open air till they have an inch of growth above the soil, when they are placed under the stage in an intermediate house, and covered with inverted pots for a few days; after the inverted pots are removed they are left in the same position for a couple of days longer, then removed to a shelf near the glass in a Cucumber house, where they remain, and receive plenty of water at the roots till the flowers are expanded.—H. D.

— EPIPHYLLUM TRUNCATUM.—This plant in recent years has been much neglected, as the majority have the idea that it is a greenhouse plant, and treat it accordingly with unsatisfactory results. It should be placed in the stove until it has made its growth, and when completed it can with advantage be removed to the greenhouse, or any other place of a similar kind, to ripen, and thence again transferred to the stove as occasion may require. It succeeds far better grafted upon *Pereskia aculeata* as a stock, and makes more rapid growth than on its own roots. If the stocks are about 8 or 10 inches high when grafted attractive plants are soon obtained. In one of the stoves here a *Pereskia* was planted a few years ago, which has entirely covered the back wall, and upon this has been grafted two varieties—viz., *coccineum* and *elegans*, which have grown with marked success. They have been flowering, and looked very beautiful. The best compost is a mixture of loam, leaf mould, and broken bricks.—R. KIRBY, *Oulton Hall Gardens*.

— AT The Brandries, Beddington, Surrey, the residence of W. Lindsay, Esq., there is a DISPLAY OF GLOXINIAS which at midsummer would be worth recording, but in the month of December appears to me unusual. The group consists of about three dozen plants, which measure rather over than under 2 feet through, with from three to five dozen expanded flowers, and numberless buds to take their place. Both blooms and foliage are remarkable for substance and size, while the former are varied in colour. The plants are mostly in 7-inch pots, the compost loam and peat half-and-half, with a fair quantity of coarse silver sand. The gardener, Mr. C. Ritchings, however, attributes the fine development of the specimens not so much to the soil as to a concentrated manure he has himself mixed, and which is used for the growth of most plants under his care. In the same stove house there are very large *Adiantums farleyense*, *gracillimum*, and *euneatum*, which are evidence of superior culture, and that there is a something which suits them admirably. Be this as it may, a market should be found for a plant stimulant alike beneficial to a hardy fruit tree or the most tender Fern.—H. SHOESMITH.

— VILMORIN, ANDRIEUX & Co.—To celebrate the great success obtained by the firm at the recent Paris Exhibition, where they were awarded three grand prizes, three gold, and one silver medal, Messrs. Vilmorin, Andrieux & Co. invited the whole of their employés to a banquet, which was held at the Salon des Familles, Avenue de St. Mandé, on the 15th inst., when 410 were present. Before the banquet a most interesting ceremony took place—viz., the presentation of a bronze statue, "David and Goliath," to M. Henry L. de Vilmorin (the head of the firm) on the occasion of his promotion to the grade of "Officier de la Legion d'Honneur." This *objet d'art* was accompanied by an address signed by 448 employés of the firm, congratulating him on the honour recently conferred upon him, also expressing the sincere respect and high esteem in which he was held by everyone. M. de Vilmorin, in a very graceful and eloquent speech, acknowledged the compliment paid him, and expressed the pleasure that his partners and he had in having around them such a vast assemblage of their people. The arrangements were admirably carried out by Messrs. Schneider & Michel, and the gathering proved a complete success in every way.

— **HORTICULTURAL CLUB.**—The usual monthly dinner and conversation was held at the rooms, Hotel Windsor, on Tuesday evening, the 10th inst., Mr. John Lee in the chair. There were present also Messrs. J. H. Veitch, Philip Crowley, H. J. Pearson, C. E. Pearson, A. J. Pearson, H. Veitch, W. Herbert Fowkes, James Walker, George Bunyard, J. H. Stott. The subject for discussion was insecticides and the best method of applying them. It was opened by Mr. C. E. Pearson, who gave a very interesting account of experiments tried with various insecticides, and afterwards Mr. J. H. Stott exhibited in operation his very ingenious invention for the distribution of insecticides, which was considered by those present as likely to be extremely useful. Mr. Bunyard stated that bitter aloes had been found much stronger and more efficacious for the destruction of aphides than quassia, and that the Cape aloes was much stronger than any other; the black fly on Cherries was considered the most difficult of all to deal with, and requires a stronger solution. It was stated by Mr. A. J. Pearson that great care must be exercised in the use of quassia and aloes in a vinery, as they once had a house of Grapes so tainted with the bitter flavour that they were useless. It was generally admitted that Stephanotis was also the worst plant for mealy bug, and that the best, if not the only way of getting rid of it was to wash the plant with methylated spirits used with a small camel's hair brush. A very interesting discussion took place, and Mr. Lee proposed a vote of thanks to Mr. C. Pearson for his valuable and interesting paper.

— **TUFTED PANSIES.**—This is a new name someone has given to our old friends the Violas, and I fail to see why. I have been a grower of the Viola for a number of years, certainly since Viola cornuta and Blue Bell were introduced, and I have been the raiser of True Blue, Mr. C. Turner, Queen of Lilacs, and other established varieties, and grow Violas by the thousand, and yet I fail to see why my old friends are called Tufted Pansies. Of Violas, as spring and summer decorative plants, it is impossible to write too favourably, and they are continuous bloomers from March until September and even October. The treatment is simple. Plant in favourable districts in October or November firmly and deeply. In less favoured districts plant in March or April, not later if it can be helped, in good soil, always firmly and rather deep. Such varieties as True Blue (Dean's), Countess of Hopetown, white; Bullion and Golden Prince Improved, both deep yellow; Ardwell Gem, pale yellow; Queen of Violets, purple; Countess of Kintore, The Mearns, a grand bedding blotched variety; Duchess of Albany, lilac and mauve; Elegans, lavender; Queen of Lilacs, blue and lilac, are only a few of very first-rate bedding varieties.—W. DEAN, *Florist, Sparkhill, Birmingham.*

— **RAILWAY RATES FOR POTATOES.**—An adjourned meeting of Scottish Potato merchants was recently held in St. John's Hotel, Perth, to consider as to further procedure in reference to the lowering of railway rates for Potatoes consigned to England. Bailie Whyte presided, and reported that the memorial agreed to at the last meeting had been sent to the goods managers of twenty-nine English and Scottish railway companies, but that very few of the latter had replied. The Midland Railway Company had answered that they would consider the matter favourably along with other companies. It was reported that the Secretary of the English and Scottish Traffic Rates Conference had announced that he could not arrange to receive a deputation, but that he would place the letter and memorial sent him before the meeting on 13th December. Mr. Thompson, general manager of the Caledonian Railway, stated that he had conferred with the general goods manager, and had asked him to assist the Potato merchants in the object in view. The goods manager of the Highland Company said the Scottish railways would be glad to have the assistance of the traders in seeking to get the rates reduced. Mr. A. Hutchison, farmer, said the carriage of Potatoes just now was equal to the value of the article itself, and that so long as that state of things existed very few could be sent by rail. Ultimately it was agreed that the railway companies should be further memorialised on the subject, and informed that the traders would be quite willing that the rates, if lowered, should be rearranged on prices rising to £3 per ton.

— **THE TREES OF CALIFORNIA.**—The coast range of mountains running through California, and fringing the western shore of the continent, is a great natural arboretum—a paradise of forest trees and flowering shrubs. North of Shasta the forests awe with their grandeur; south, the scenery is park-like and sylvan, and the shrubs are at home. Here can be found the extremes of tree growth. The hardy species of the north are not only neighbourly, but familiar, and even intimate, with the delicate representatives of the south. The resinous breath of

the Pine and Hemlock, Juniper and Fir, mingles on the same hillside with the spicy fragrance of the Bay tree and the perfume of the Balm. The evergreen Redwood rises, straight as an arrow, to a height of from 200 to 300 feet. There are whole tribes of the Coniferae, dozens of species of Cypress and Cedar, a variety and relationship of the Oaks that drives the botanist wild, ravines filled with the flowering Dogwood, sweeps of glistening Manzanita, spattered patches of the red-berried Buckthorn, rifts of the pink-petalled Rhododendron, sanguinary patches where stands the Judas Tree. In this favoured country also bloom and bear the Pomegranate, Fig, Olive, Almond, Apricot, Lemon, Orange, and the Nectarine. The Camellia is a tree, the Heliotrope a stout shrub; Geraniums are used for scarlet hedges; the Cala Lily is a weed. And to round out this riot of luxuriance—this saturnalia of foliage, fruit, and flower—Nature sows every spring, in and through it all, a crop of wild Oats such as was never even dreamed of by the original prodigal son.—(*Harper's Magazine*).

— **THE third annual dinner of the LIVERPOOL HORTICULTURAL ASSOCIATION** was held on the evening of the 14th inst. at the Bear's Paw Restaurant, Lord Street. There was an excellent attendance of members, upwards of 170 being present. The whole proceedings were marked with an enthusiasm and goodwill which speak well for the unity and welfare of the Association. The Chairman of the evening was Fletcher Rogers, Esq., the excellent and popular Hon. Treasurer. After the loyal toasts had been duly honoured, and the National Anthem sung with such vigour as gardeners only can sing it, the Chairman proposed the "Liverpool Horticultural Association," remarking that he claimed for the Society that it was a special benefit to the neighbourhood in which it existed. He at times viewed with regret the want of appreciation it met with, notably in the summer Show of the present year; but he rejoiced to know that the Society consisted of members who never knew defeat, and who, although there might be temporary discouragements, were determined to go on until success was achieved. Mr. White, Chairman of the Executive Committee, responded, and said the Committee had passed through a very depressing and anxious year. Although the summer Show was removed from Sefton Park to Fairfield, where it was thought it would be more accessible to the masses of the people, it had resulted in a considerable loss. He was happy, however, to be able to state that the public had recognised the excellence of the autumn Show, and had attended it in larger numbers than had been the case for several years. The subscribers still numbered about the same, and, encouraged by the success of the autumn Show, the Committee had arranged for a spring show for the ensuing year. He trusted there were brighter days in store for the Association, and that with the new year a more prosperous career would be entered upon. Other toasts followed, and a pleasant evening was spent.—A. R. C.

TRENTHAM.

OCCASIONALLY we read or hear something about Trentham, either in the way of a new variety of Orchid or of fruit; and this year Trentham is to the fore in the Chrysanthemum world. All branches of gardening have, for many years, been well represented there. Old gardeners remember Trentham in the time of Fleming; middle-aged gardeners have a recollection of it under the superintendence of Zadok Stevens; the rising generation will know it better under the management of Mr. Blair. Changes of various kinds have occurred, but gardening, it may be in different forms, is yet predominant. In spring, summer or autumn the gardens are always beautiful, interesting, and instructive, though some people will think they are more so in July than in November. "The old order giveth place to the new" at Trentham as elsewhere; old hothouses are rebuilt and modern improvements added where practicable; useless structures replaced by new ones on a better site, and "onward and upward" appears to be the watchword in more senses than one.

Improvements, in the strict sense of the word, are effected in the pleasure grounds and American garden as time permits and good taste and careful consideration suggest, not as some men do, by reversing and upsetting and altering everything done by their predecessors, but by thoroughly grasping the ideas and objects of the designing master mind and carrying them out now, years after, by reducing within proper limits the overgrowth permitted in previous years by uncontrollable circumstances; the lopping of a bough here and there, the removal of a tree grown too large and obstructing a desirable view, and by additional planting to complete, perfect, and, if required, to extend the original design; these are true improvements, and Mr. Blair exemplifies the correctness of his own artistic skill by recognising and conforming to the lines laid down by others.

The flower gardens are tastefully planted every summer, and the general keeping of the same is all that could be desired. Thousands of the Potteries people and from other towns avail themselves of the opportunity given by the annual flower show held in or near the

gardens to enjoy the gardens so generously thrown open by the Duke on that occasion; and that His Grace wishes them to enjoy the beautiful gardens is well proved by the interest and pleasure he exhibits as he mixes with the people. The magnificent house, the extensive lake, the covered walks, grand flower gardens, lawns, conservatories, &c., are so imposing that none but the most prejudiced can help admitting Trentham to be a beautiful and interesting, if low and damp, place, and to do justice to it would require a far abler pen than mine. I give a few notes of the gardens as I found them in the month of November, one of the most dreary months of the year, therefore they were seen in almost their duldest garb and not in their brightest.

THE GLASS STRUCTURES.

These if placed end to end would extend over a mile in length, consequently a detailed account of each house or its contents would take up too much of the valuable space of the Journal. The first entered is the early Peach house. The lights have been off all the autumn for the purpose of thoroughly maturing and resting the trees, or approaching rest as near as good culture will permit. The trees are clean, wood strong and bristling with buds nearly

by the way, having always been exceptionally well grown at Trentham. No. 7 is a vinery similar in size, &c., to the last, and is planted principally with Duke of Buccleuch, a noble Grape, unsurpassed in appearance, and scarcely in flavour, when well grown; but its unfortunate liability to "spot" in many places somewhat damages its reputation, and places it at a disadvantage with other Grapes of less sterling merit. No. 8 vinery is filled with late Hamburgs, which will carry the supply well into the new year, to be followed by the thicker skinned ones until the supply of new Grapes, from pot Vines, in May. This list does not exhaust the number of vineries at Trentham; but it gives a fair idea of the quantity, quality, and variety of Grapes grown there. It will be observed that, with all the space at command, the number of varieties is very small as compared with the number in general cultivation. Black Hamburg predominates, and is followed by Madresfield Court, Museat of Alexandria, Duke of Buccleuch, Lady Downe's, Gros Colman, Mrs. Pince, and Fosters' Seedling. There are several other varieties, but they are in a minority.

THE LARGE CONSERVATORY.

A rectangular structure with ridge and furrow roof and about 100 feet



FIG. 68.—THE GARDENER'S COTTAGE, TRENTHAM.

ready to burst, and they will be encouraged to do so on and from the 1st of December. The back wall of this house, as in many of the fruit houses at Trentham, is covered with Camellias, chiefly *alba plena*.

The next house is a vinery with a ridge and furrow roof, and called the Muscat house; it is 144 feet long and contains thirty-six Vines, the principal varieties being Museat of Alexandria (of excellent colour), Alicante, Gros Colman, and Mrs. Pince, good crops of each sort, and each sort a good example of its kind. Nos. 2, 3 and 4 vineries have had all the fruit cut and are resting. They are young Vines and have made wood of good quality, but fruit must be had, and they are taxed each year to the utmost. In No. 2 were thirty-three baskets of *Cœlogyne cristata*, most of them being 2 to 3 feet across, and all with fine pseudo-bulbs well set with flower spikes; these will be a splendid sight in the new year. No. 4 vinery contained some newly imported *Dendrobiums* having made extra strong growths during the past season at Trentham; these were *D. Wardianum*, *D. Freemani*, and *D. nobile nobilius*. No. 5 vinery is at rest and is filled exclusively with Black Hamburgs. No. 6 is a "glass ease" vinery 100 feet long, and is full of good useful bunches of Black Hamburg and Madresfield Court Museat, the latter,

square, more or less, I have not the exact dimensions. The objects that most attract the eye in November are the magnificent Camellias which form the chief occupants of the house. It has been my privilege to visit Trentham Gardens at intervals during the past twenty years, but I never saw the fine collection of Camellias in such splendid condition as they are this year. Perfect pyramids from 8 to 14 feet high are planted all over the house; all are in perfect health, and every one studded with flowers or flower buds. Where all are so good it is almost impossible to particularise; but there is one plant that commands special admiration; it is a gigantic specimen of *Camellia alba plena* 14 feet high and 30 feet in circumference, and covered from summit to base with flowers or buds and luxuriant foliage. The varieties comprise *alba plena* in quantity, *candidissima*, *Lady Hume's Blush*, *Bealei*, *Chandleri*, *Chandleri elegans*, *Donckelaari*, *Jubilee* and others. There is a good specimen of *Luculia gratissima* in this house, and during the winter months its large trusses of rosy pink and fragrant flowers are very showy and useful. Those people who know this plant will understand its value; others who do not, but who have plenty of head room for large Camellias, should obtain several plants of it from their nurseryman.

THE PEACH CASE.

A lofty but narrow, though roomy enough, structure devised for protecting Peach trees, &c., on walls at a minimum cost of money and of ground space, but at the same time giving the same command and the same facilities as the ordinary Peach house. This glass case is 600 feet long, in two divisions; the back wall is planted with all the approved varieties of Peaches and Nectarines and bearing good crops in their season. At the time of my visit the fruit and foliage was nearly all off, and tall grown Chrysanthemums were standing before them. The front of the case is well trellised, and on the trellis are grown young Peach trees that are annually dispersed throughout the length and breadth of the kingdom, Trentham having been noted for years for its well grown fruiting Peach trees. In the second division are eighty trees of Calville Blanche Apples in pots, each tree bearing a few very finely grown and coloured fruits. Apparently, and after careful examination, these trees (so juvenile do they look) are about fifteen years old; inquiry proves them to be between forty-five and fifty years old! The uninitiated must not suppose them to be gnarled and large trees in correspondingly large pots, far from it. They are trees that the inexperienced might, without appearing foolish, take to be five or six years old, and are in pots about 12 inches in diameter. In fact, the trees, with their fruit on, are frequently used for decorating the dinner table.

THE PLUM HOUSE.

At a right angle to the Peach case, and bounding the top of the enclosed kitchen garden is another range of glass, the first division being devoted to the Plum. It is 80 feet long, and is planted front and back with Plum trees. Mr. Blair is noted for his Plums, and takes first honours easily wherever he exhibits them. The varieties grown in the house are Ickworth Imperatrice, Dennison's Superb, Coe's Golden Drop, Reinette Claude de Bavay, Golden Emperor, Jefferson, Transparent Gage, and McLaughlin's Gage. Passing through one of the vineries we enter the Cherry house (which is a division of one of the long glass cases near the gardener's residence, and used for Vines, Peaches, &c.), trees are planted back and front, and the wood is strong and clean, and covered with large flower buds which, in due season, will produce very fine fruit in great abundance. It is to be noticed that Mr. Blair does not overcrowd his fruit trees with young wood during summer and autumn, only to be cut out in winter; but he thins the young shoots freely during the growing season, and leaves little more than will be required for bearing fruit the following year. That is a practice followed by all the best gardeners. If the most regular crops and the finest fruit be desired from any tree, the shoots must be so distributed that each leaf may receive unobstructed solar light upon the whole of its upper surface; all foliage in excess of that, or which smothers other foliage, indicates so much comparative waste and surplus wood, the smothered portion being weak in vitality, immature, and worthless. Therefore the golden rule is:—Allow just as much foliage, and no more, as will fill the allotted space without crowding, and allow the sun to shine upon and between all the leaves; this applies as much to Vines as to Peach trees, Plum trees or Cherry trees. The varieties cultivated in the Cherry house at Trentham are Bigarreau Napoleon, Black Tartarian, May Duke, Rivers' Early, Governor Wood, and Black Circassian.

At the top end of the kitchen garden is a block of span-roofed houses built after modern ideas, several by the late Mr. Stevens, and several recently by Mr. Blair. All are substantial and roomy structures of equal length, and each house in two divisions, but vary in width and in height. The first division we entered is used as a Palm house, the central portion being occupied chiefly with Kentias and *Cocos plumosa*, fine useful specimens 8 to 12 feet high. The side shelves are occupied principally by smaller Palms and a large quantity of *Anthurium Schertzerianum*. On the roof are fine specimens of Pitcher Plants (*Nepenthes*). In this house and a corresponding house Mr. Blair has adopted a somewhat unique method of keeping a moist atmosphere. The usual practice is for the man in charge to damp the pathways of such houses so many times a day by means of a watering pot. This has been dispensed with, and a small water pipe is carried along the front of the stages next the path, and this pipe is perforated at intervals with pin holes. By turning a tap the water is discharged through the pipe at any desired pressure, and may either be arranged to run slowly all day and night, or may be turned on with greater force for a few minutes. By these means the alternate damping and drying of the usual system is avoided, and an equable atmospheric moisture sustained. That the plants like the treatment is amply demonstrated by their luxuriance and cleanliness.

The next division is the *Cattleya* house, and consists of a large central stage with a water tank underneath and side shelves. The chief occupants of the centre stage are a grand lot of *Lælia purpurata* showing ninety flower spikes. Considering the short time since these were imported, it is probable these plants could not be surpassed for size and health by any in the country, and the same may be said of the scores of *Cattleya Mendeli* accompanying them. On the side shelves were fine examples of *Cymbidium eburneum*, *C. Lowianum*, *Zygopetalum Mackayi*, *Vanda cœrulea*, a handsome variety; *Barkeria melanocaulon*, and a grand lot of *Lælia anceps* and *L. anceps Dawsoni*, all showing 112 flower spikes, which will probably be a grand sight by the time these notes appear. The next house is occupied with winter Cucumbers, amongst which is a very nice seedling raised by Mr. Blair, and more will probably be heard of it. In some small frames in the interior of this house the earliest Lily of the Valley and Hyacinths, &c., are forced. Mr. Blair makes a

point of having his first Lily of the Valley by 17th November. The next division is filled with hundreds of beautiful plants of *Poinsettia pulcherrima*; these will be a sight worth a long journey to see. I am told these occasionally receive a sprinkling of nitrate of soda.

The second Palm house is a counterpart of the first, the contents being somewhat varied, amongst which are splendid plants of *Areca lutescens*. In the third Palm house are quantities of *Eucharis grandiflora* and *Pancratium fragrans* growing luxuriantly as an undergrowth to the Palms above them. The best specimens of *Eucharis* I have ever seen have always been grown under constant partial shade and in warm quarters; it is impatient of prolonged low temperature and strong sunlight. Hanging next the glass in this house was a very fine lot of *Dendrobium Jamesianum* ripening off their new growths, which were very strong for newly imported pieces, but all the Orchids at Trentham are in the best of health.

The next house and parallel to the others is a span-roofed Peach house, filled underneath the trees with a very fine lot of trained Chrysanthemums, and the adjoining division is planted with Roses and Tomatoes alternately, and the borders are filled with scores of strong useful plants of Arums. The favourite Tomato here is Hackwood Park, a variety difficult to surpass, all points considered. The last house of this block we enter is the Fig house, and the trees are planted on each side, the favourites being Brown Turkey and Negro Largo. The next division is used as a greenhouse, and is at present filled with dwarf-grown Chrysanthemums, 2 to 4 feet high, and carrying three to six good flowers.

FLOWERING ODONTOGLOSSUM HOUSE.

Those who have seen this at its best will not require convincing of its loveliness or of the health and vigour of the plants. It is a lean-to house with a north aspect, and about 90 feet long, and for quality of flower, general size, and healthiness of plants probably cannot be surpassed in the country. November is not the time to see an *Odontoglossum* house in full flower, but having seen this at other times I venture to say it is not possible by any word-painting to adequately describe its beauty. Hundreds of spikes of *O. Alexandra*, *O. Pescatorei*, *O. Rossi majus*, *O. Insleayi*, *O. triumphans*, *O. Halli*, *Oncidium macranthum*, *O. Forbesi*, *Epidendrum vitellinum*. These and others greet the eye at different periods, and the year round this house is well worth seeing. There is a mirror on the door at either end of the house, and the walls about these are coloured blue, which gives a very pleasing effect, more so than will be credited without being seen. The mirrors reflect the house and contents, and looked at one or both ways is apparently doubled or trebled in length.

Leaving this interesting house, we enter some of the pits devoted to growing small plants in thousands. In the first pit are healthy lots of *Dracena rubra* (true), *Kentias*, *Aspidistras*, *Asparagus plumosus nanus*, a grand batch of *Adiantum fragrantissimum*, *Anthurium Andreanum*, *Phalenopsis violacea*, *P. amabilis*, and *Dendrobium Brymerianum*; the latter there is a great quantity of first-class plants. In pit 2 we saw some *Dendrobium Ainsworthii* and *D. Ainsworthii roseum*. Mr. Blair knows when he has a good thing, and he loses no time in increasing it, and growing it in the best possible manner. Scores of pots of *Pleione lagenaria* (Indian Crocus) are on the shelf next the glass, and are pushing up their flowers from beside their flask-shaped pseudo-bulbs. In an adjoining pit are dozens of *Bouvardias* covered with flowers and flower-buds, and for general health cannot be excelled.

Other houses and pits are devoted to the establishment and culture of newly imported *Odontoglossums*, which are grown in tens of thousands. That the houses and treatment they receive is amply demonstrated by the stiff deep green and clean appearance of the plants collectively and individually, large and small. In the *Odontoglossum* and *Masdevallia* house at the back of the old Melon ground are several unusually strong plants of *Oncidium macranthum*, and fine lots of *Odontoglossum cirrhosum* and *Masdevallias*, the chief species of the latter being *M. Veitchii*, *M. ignea violacea*, *M. Davisii*, *M. Shuttleworthii*, *M. Harryana*, *M. regalis*, *M. rotundifolia*, *M. Chelsoni*, *Thompson's Scarlet*, and *Bull's Blood*. These are only a portion, and for size and healthiness they must be seen to be appreciated. The original *Odontoglossum* house, and which yet contains the original *Lapageria alba* on the back wall, is being furnished with a new roof and front, and will probably be used as such for very many years to come.

THE LAPAGERIA HOUSE

Had thousands of flowers hanging from the roof during September and October, and it must have been a very unusual sight. Every square foot of the large roof is covered with luxuriant growth. The aquatic house does not look as it used to when aquatic and semi-aquatic plants were grown in and over the bank; but the back part of the house is as pleasing as ever, if not more so. Bananas (*Musa Cavendishiana*) occupy their old home, and keep up an almost endless supply of their rich fruit. They are as strong, and possibly stronger, than usual.

Several other ranges of houses have been raised higher by Mr. Blair, and are filled principally with miscellaneous stove plants for decorative purposes, and with a large quantity of *Cypripediums* (Lady's Slipper) of all the best species and varieties.

THE CHRYSANTHEMUMS.

These have been a great feature at Trentham this autumn, and specimens of the general quality have been seen at most of the principal shows in England, where they have occupied very honourable positions.

The most notable is Mr. Blair's success at Hull, when he won the coveted challenge vase and also a silver cup in another important class, which is a stroke of business seldom equalled at a similarly important exhibition. About 3000 plants have been grown at Trentham this season. Of that number 700 were grown for producing large blooms; the remainder consisted chiefly of dwarf plants 2 to 4 feet high, but the bulk of them 3 feet, with three to six good flowers, and suitable for general decorative purposes; and a large number of specimen plants fit for any exhibition, the remainder, comparatively few in number, roughly grown for cut flowers. Such a large quantity of plants occupy a considerable amount of space, and numerous houses were filled with them. Collectively they have made such a show that probably could not be seen in any other private garden in the kingdom, and possibly in very few trade establishments where the plant is a specialty, if quality as well as quantity is taken into consideration. Many of the newest have had a good trial, and most of them have turned out all that could be desired. Among the incurved may be mentioned Violet Tomlin, Miss Haggas, Mr. Shoesmith, W. K. Woodcock, and Lord Eversley as new and of good quality; whilst older varieties were represented by hundreds of first-class blooms of Empress of India, Golden Empress, Queen of England, Alfred Salter, Emily Dale, Lord Alcester, Bronze Queen, Lord Wolseley, Prince Alfred, Mr. Bunn, White Beverley, and John Salter. Amongst the Japanese, the new varieties were well represented by Stanstead White, Buttercup, Condor, Etoile de Lyon, Mrs. J. Wright, and C. Cannell; and quantities of first-class blooms of Belle Paule, Mad. C. Audignier, Meg Merrilies, Ralph Brocklebank, Mdle. Lacroix, Avalanche, Fair Maid of Guernsey, Balmoreau, E. Molyneux, Criterion, J. Délaux, Golden Dragon, Lady Selborne, Mad. J. Laing, Val d'Andorre, and Thunberg. Much credit is due to Mr. Murk, who has attended to the requirements of the Chrysanthemums from first to last.

In the walled-in kitchen garden all the quarters are occupied with vegetables and salads for winter consumption; not a square foot of ground is allowed to be unoccupied. Thousands of Celery are grown, and Major Clarke's Red is the favourite. Three or four thousand plants are grown in pots for forcing, and a fine batch they are, with fat plump crowns. The kitchen garden near the American garden is a novelty in design. There is nothing elaborate about it, but is simply a circular piece of ground which, until recently, had a tank in the centre; but this is now filled up, and forms a central turning point for the small waggons used in these extensive gardens; the paths radiate from the centre, and the ground is thus divided into segments of a circle. This ground is also occupied with winter vegetables, chiefly Brussels Sprouts and Broccoli. Potatoes are grown in a field, and the staple supply of Apples comes from an orchard at a distance from the gardens. The total area of gardens, including orchard, under the charge of Mr. Blair is nearly 100 acres, and all departments prove that he is master of his work. The pretty house in which he dwells is shown in the engraving on page 533.—VISITOR.

POINCIANA REGIA.

THERE are two well-marked varieties of this magnificent flowering tree in the East Indies, though I cannot say whether they are permanent or not. One has scarlet and yellow blossoms, and the other crimson and white. The former seems to be the most common, and is abundant at Madras, Secunderabad, Rangoon, and other places, while the other prevails chiefly at Bangalore. Whether due to the climate or not I am unable to state, but it appeared to me that the foliage of the Bangalore plants was richer and more profuse, and consequently much more beautiful, than any that I saw elsewhere. Indeed, the luxuriance of the trees generally on the Mysore plateau seemed to indicate that there they had found conditions of soil and climate eminently favourable to their most perfect development. There are, however, many large and noble specimens at Coimbatore, near the foot of the Nilgherries, and in May the road close to the town was all aflame with their gorgeous flowers. No object in the whole vegetable kingdom can, in my opinion, vie with this splendid Poinciana in the radiant wealth of its peerless bloom—not even the far-famed and glorious *Amherstia nobilis*, which I have seen in great perfection at Rangoon and Moulemein, in Burmah.

I have now and then heard the Poinciana regia called the Ostrich-feather Tree, without doubt on account of its beautiful foliage, which has much the appearance of broad spreading plumes; and at Bangalore it is occasionally known as the Flame of the Forest; but this name, though by no means inappropriate, is the prior property of another brilliant plant, the *Ixora coccinea*, to which it is also very applicable. Sometimes in India the term Gold-Mohur Tree is used to specify the Poinciana under notice, though it seems to be really owned by the yellow species *Poinciana elata*; and the name of Flamboyant is familiar to those who have seen the tree at the Mauritius.

Poinciana regia has apparently only been found in a wild state in Madagascar, whence it made its way many years ago to the Mauritius, and subsequently further east. It belongs to the Natural Order Leguminosae, and the genus was named by De Candolle in honour of M. de Poinci, once governor of the Antilles.—G.

CIVILISATION AND PLANT LIFE.

At a recent weekly meeting of the Richmond Athenæum, Mr. R. A. Rolfe, A.L.S., read the following paper on "Civilisation Viewed in its Influence on Plant Life." Mr. E. King presided.

If we reflect for a moment on the number and variety of the products derived from plants which minister to man's daily needs, as food

clothing, and medicine, we can form some little idea of our indebtedness to the vegetable kingdom for the very means of subsistence. Our own supplies are brought from almost every clime under the sun, and we have become so accustomed to existing conditions, and regard them so much as a matter of course, that I question whether any of us can realise what the effect would be if England were isolated from the rest of the world for a few short weeks. The production of these vast supplies of food, and other necessities and comforts of life, entails the laying under cultivation of large areas of the earth's surface, and a corresponding displacement of the plants which would otherwise occupy the ground. How great this displacement really is would be difficult to estimate, and perhaps it can best be expressed in few words by saying that agriculture is the greatest and most important of all industries. There is no tradition, no written history, to tell us at what time man began to till the land, but fortunately there are other data from which pretty satisfactory evidence can be obtained. In order to discover the first distinct traces of the culture of the fields we must go back to the time of the builders of the Swiss lake-dwellings of the neolithic age. At this epoch we have evidence of the cultivation of five distinct kinds of Wheat and three kinds of Barley, also two other cereals. Apples—wild and cultivated—have also been found, together with remains of the Pear, Cherry, Plum, the wild Sloe, Peas and Beans, Hazel and Beech nuts, Acorns and Chestnuts, the Blackberry, Raspberry, and Strawberry, the Poppy, Flax, and possibly of two or three other plants of economic use. Even remains of bread and carbonised cakes of Poppy seed have been found, and in one locality several bushels of Wheat were discovered heaped up in one place, evidently the provision of some family or tribe. Flax was extensively cultivated, for pieces of rudely woven cloth and balls of flax thread, string, and cord, have been found, also the rude looms in which the cloth was woven. Numerous hand mills for pounding and grinding the various cereals are among the relics of these ancient cities. The bread had evidently been baked between hot stones, and was found in the form of little circular cakes, 4 to 5 inches in diameter by 1 to 1½ inch thick. It was unleavened, and I need scarcely add that wholemeal bread was then the order of the day. A cake made from the seed of the garden Poppy has also been found, reduced to a cinder. By whatever means agriculture was first instituted, it has certainly progressed and multiplied enormously, and even before the historic period several plants were very widely cultivated, of which may be noted especially Wheat, Maize, the Sweet Potato, several Millets, and Tobacco.

Having spoken of the three great centres in which agriculture apparently originated—namely, the East, China, and Tropical America, the lecturer said the indirect effects of the extension of agriculture are of two kinds—first, the diffusion of a host of weeds, which in various ways are introduced with the plants cultivated by man, though much against his will; and second, the spread of certain economic plants beyond the area in which they have been planted, owing to the climate and situation being especially suited to their requirements. Perhaps the two classes are not strictly separable; at all events, our European Watercress is an example of a useful plant introduced into New Zealand with the best intentions, but which, like the rabbit in Australia, has increased to so prodigious an extent as to choke up the streams, and altogether has developed into an unmitigated pest. It is clear that if any given plant is found to be useful to man, and to become the subject of extensive demand, then the natural supply at once tends to diminish, and the only way to keep up the supply is to bring the plant under cultivation. In the second place we see that man's requirements are so extensive, and have such a tendency to increase, that more and more land is continually being brought under cultivation, with the inevitable result—however much we may regret it—that many of the most charming spots on the face of the earth are being destroyed by the axe and plough, many of Nature's wildlings are gradually becoming more restricted in area, and some of them must eventually become as extinct as the dodo; indeed, there are grounds for believing a few are already extinct. In the third place we see that others of their fellows benefit by the operations of the agriculturist, filling up the ground prepared by him for more useful crops, and generally defying him to do his worst—hence the unrelenting war waged against them. And lastly, we see how the great law of evolution comes into play, and in the hands of the cultivator becomes one of the most useful servants of mankind by increasing his food supplies or adding new beauty to the plants he cultivates for ornament.

In conclusion, a few thoughts as to the needs and possibilities of the future. The world's timber supply is rapidly becoming one of the burning questions of the day. The utter recklessness with which whole districts have been denuded of their splendid forests has been universally regretted, and especially when this destruction has been followed by a distinct deterioration of climate—a fact which has been recognised over and over again, both in America and elsewhere. Perhaps much of this destruction was inevitable, though none the less to be regretted on that account, especially when one remembers the vast quantity of valuable timber which has been committed to the flames simply to get rid of it, and thus practically wasted. The question of reforesting certain districts is now one of the questions of the day, and one which must be solved in the near future. Indeed, much good work has already been done, and one cannot help viewing with admiration the practical recognition of this need of the future by the Indian Government, the success with which the Indian Forest Department has been organised, and the good work it has already effected. It is perhaps not too much to say that in the near future arboriculture will take its place beside its sister industries, agriculture and horticulture, in a way that has never been

seen before. The influence which civilisation has exerted on the vegetable kingdom has not always been a beneficent one, yet by working in harmony with the great law of evolution it has showered untold blessings on the whole human race.

The Chairman said that the destruction of timber in various ways in Switzerland was having an effect on the climate, and in time some steps might have to be taken to counteract the effect. Mr. Baker, of Kew, deplored the great harm that had been done by man to the most beautiful parts of the earth. The results of man's care and attention to certain kinds of plants was illustrated in the numerous varieties of the Chrysanthemum, and also in the many kinds of Apples which were widely different from the wild species. Mr. Miller spoke of the influence which animals exerted on plant life, and amusingly traced the effect of the existence of old maids on the supply of Clover. Clover, he said, was fertilised to a great extent by humble bees; the number of humble bees was affected by the number of field mice, the number of field mice by the number of cats, and the number of cats by the number of old maids. (Great laughter.) Mr. Morris, of Kew, said that much harm was done to the productiveness of soil by the destruction of forests in tropical countries. The ground was exposed to the heat of the sun, and this led to great evaporation and aridness. In this country many more trees were cut down than were planted, and in time, if this went on, it might produce a change of climate. Not only might the growth of necessary products be affected, but the beauty of the scenery and the health of the climate, for both of which it was necessary that there should be trees growing wherever possible. Mr. Wakefield thought that in the Thames Valley a few trees could be spared, as it might have the effect of making the atmosphere less humid and relaxing. Mr. Jackson pointed out that besides the large amount of timber that was cut down in order to clear the ground for cultivation, much was also used up in the making of india-rubber and turpentine. Dr. Wilson said that in New Zealand he found that the European grasses were driving out the native grasses, to as great an extent as the Europeans were shouldering out the Maories. A hearty vote of thanks having been accorded to Mr. Rolfe for his paper, he briefly replied.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE last Floral Committee meeting of the year was held at the Royal Aquarium, Westminster, on Wednesday, December 11th, at 2 P.M., when Mr. R. Ballantine took the chair, and the following members were present:—Messrs. E. Sanderson, G. Gordon, L. Castle, R. Dean, H. Cannell, F. P. Kendell, J. Wright, C. Gibson, R. Owen, G. S. Addison, J. Mardlin, C. Swift, T. W. Boyce, and T. Bevan.

For so late a date there was a good number of exhibits, Mr. R. Owen contributing a number of new varieties, amongst which were the following:—White Elephant, a Japanese, somewhat like James Salter, of a purplish tint, but whether this was due to the age of the blooms or the late period could not be determined. The Japanese W. W. Cowles was again shown, but though the colour is good the blooms were not sufficiently developed in the centre to merit an award; the Committee, however, desired to see it again. The variety is evidently a promising one, for we have seen fine examples in the north of England this season, but a committee can only judge of a variety by the specimens submitted, not by its reputation. This point has been frequently discussed, and exhibitors should bear in mind that the condition of the flowers shown is all there is to guide the members to a decision. Mr. Owen also had a Japanese named Mrs. J. Wannamaker, to be seen again, and Mrs. J. Clarke, regarded by some as much like Volunteer. A vote of thanks was accorded for the collection. Mr. Taylor, gardener to Sir J. Lubbock, High Elms, Down, Kent, also had a collection of fresh Japanese and incurred flowers (vote of thanks).

At the conclusion of the ordinary business, the Committees had some other duties to perform, upon which they entered with considerable zest. It was decided at a general meeting earlier in the season that it would be more convenient if the Floral Committee were entertained at a luncheon on the conclusion of the year's work than at the Judges' luncheon on the day of the November Show, when the bustle and confusion render attention to such matters a rather painful duty. Accordingly the full force of fifteen elected members assembled to prove the wisdom of the decision, and they evidently accomplished the very easy task entirely to their own satisfaction and that of the projector. Several eloquent speeches were delivered by horticultural orators of repute, graceful compliments were showered down upon the officials, and Mr. Cannell discoursed fluently and instructively upon the present high position of the Chrysanthemum, the work of the National, the wide extension of interest in the plant, and cognate matters, treated, of course, in his usual trenchant manner. The Hon. Secretary was "toasted," the Chairman was similarly treated, both responding in touching terms. The venerable and venerated past President expressed a wish that the Committee would continue its useful work, and a neat piece of Gordonian oratory in reply, admirably rendered the best intentions of the members

to justify all the good things said of them. Then, as they say in the daily papers, "the proceedings terminated," for the Chairman and Secretary are busy men, and it was not until a late hour that they were enabled to cast aside the cares of office.—M. N. C. S.

PROBLEMS IN CHRYSANTHEMUM CULTURE.

[A Paper read by Mr. J. Wright at Hull, Nov. 21st, 1889.]

(Continued from page 513.)

POTTING, WATERING, AND FEEDING.

THESE are factors of the highest importance in contributing to success in the cultivation of Chrysanthemums. The triune subject can only be treated in general terms, and concisely, as to go fully into the matter would absorb time that can be better occupied by others in discussion. Briefly, then, I think the tendency amongst persons who have not been trained by masters in the art of plant culture is to err in overwatering in the early stages of growth, and again when the blooms are opening and during their period of beauty; and to err in the under-watering during the bright, dry, sultry days of summer, when the pots are crowded with roots and the sun extracting moisture from the foliage faster than it is supplied from the soil. I do not suggest that all amateurs make these mistakes, but I know they are common; and I am not able to say that all gardeners avoid them, but I know that some do, and these are they who score the greatest triumphs in public competition. A valuable prize was never yet won in keen competition that was not the result of close attention to small details in routine rather than by the adoption of some new method, or the use of some fertilizer unknown to the rest of the world. Many a mistake has been made in repotting: when the ball of soil containing the roots was either too dry or too wet. If too dry no amount of after watering can make amends for the error; and it is impossible to give enough for moistening the central lump of old soil without spoiling the new; while if the old is too wet, a stagnant mass, the new soil will in all probability become stagnant too. At any rate, the sluggish roots cannot take free possession of the new compost and imbibe what it may contain for the support of the plants. I desire to impress on all who are inexperienced, be they amateurs or gardeners who are employed in shifting the plants, the absolute necessity of avoiding the serious mistakes alluded to.

The ball of soil when turned out of a pot for placing in a larger should be decidedly moist, yet not distinctly wet, and the soil to be used must be damp enough for compression, while it does not adhere unpleasantly to the hands. When in the right condition it can and should be pressed down as firmly as the old, for two reasons. First, because firmness causes, by the force of resistance, a multiplication of roots; and, secondly, because the greater the bulk of soil in a pot the greater the quantity of food it contains. The character of the growth resulting from those provisions of great root subdivision and adequate nutriment in the soil directly promotes firm short-jointed growth under favourable conditions of watering and position, in contradistinction to the frothy growth that follows when a few strong roots strike through a comparatively loose bulk of soil. These remarks have a direct bearing on watering and feeding, as I will show in a moment. By firm potting the soil does not become dry nearly so soon as when the soil is loose, and consequently water in the former case is not needed nearly so often. Therefore, and this is a point worth remembering, much food is retained under the first practice, and appropriated by the plants, that is washed out by the second with the oft recurring drenchings.

"But surely," some may be mentally remarking, "the soil can be made too firm, especially for young plants." It can, and for large plants too, but not if it is in the right mechanical condition. Nothing incites the multiplication of roots in young plants more than sweet leaf soil, not made from fermented but unfermented leaves, and nothing better retains moisture for those roots. Add to it an equal bulk of loam with a suitable admixture of sand and crushed charcoal, also a slight dredging of powdered superphosphate or steamed bone flour, and it will not be easy to pot too firmly, while the food will be suitable for the infantile plants. Phosphatic, or bone manures, are good all through the season, and their quickness of action depends on their fineness; for wearing well in larger pots they should be coarser, and they thus exercise a good mechanical as well as chemical effect. In all cases it is desirable to incorporate the manure in the soil, which should be damp, at least a month before using. Potash is essential, but if Clover abounds in the turf that is cut for storing, the soil will contain sufficient of that material. If there is no Clover, give an occasional light dredging of crushed saltpetre, or mix a 5-inch potful in a bushel of the compost with the same quantity of bone meal. Some special manures contain those important ingredients in due proportion, with the addition of a more active stimulant, and those who have found the preparations satisfactory cannot do better than adhere to them. Lime is a necessity, as is sulphur, and both are combined in sulphate of lime or gypsum, and this may be used similarly to the other ingredients. Observe all those mentioned are foods, not merely stimulants. They are the bread and beef, so to say, of plants, while the nitrogenous manures, such as nitrate of soda and sulphate of ammonia, are more analogous to wine and whisky. I think some doctors recommend these to Chrysanthemum growers that are low, while they are sometimes believed to do good if not ordered, and are taken accordingly, but moderation is a golden rule to remember, and so it is in giving active stimulants to Chrysanthemums.

Reverting to watering. It is too much the custom to drench the soil as soon as plants have been shifted. Much better is it to syringe

the foliage for a day or two to prevent evaporation than to saturate the soil before root movement commences; but flagging must not be permitted through lack of moisture at the roots. When the soil is too dry the roots shrivel, when too wet they decay, the result in both cases being the same—plant enfeeblement. Avoid the two extremes, and healthy growth follows. Injury is often done to Chrysanthemums by heavy and continuous rains occurring just as the final potting is completed in June. Ample drainage and raising the pots from a close wet surface minimises the evil.

Fresh surface roots induced by a generous top-dressing when the petals are forming are of service, with judicious feeding, superphosphate of lime dissolved in soot water being good at this stage. I must leave practical cultivators to say what else is needed on this subject. I am going on too long. When plants are housed the syringe is often of more use than the water pot for a few days, and root stagnation must be particularly guarded against; but so must drought, though I have seen many plants kept too wet at the roots in October and November. Attending to Chrysanthemums well is intellectual work, and reminds of the famous agriculturist who, when asked what he manured his crops with replied, "Brains, sir, brains;" and you may depend upon it there is nothing like brains for Chrysanthemums.

THE DAMPING OF BLOOMS.

Nothing is more disappointing than to grow Chrysanthemums for a year, produce handsome blooms not long before an exhibition, for which they may be reasonably expected to "keep," then in a night to find them suddenly and unexpectedly collapse, blackness and decay following freshness and beauty as if at a bound. The great scourge known as damping has ruined the blooms of the best of Chrysanthemum growers—men who have adopted the best means known to them for their preservation. That being so renders it obviously the more difficult to assign a cause for the misfortune that can be expected to meet with anything like general acceptance. It were useless discussing remedies, for there are none. It is not in the power of man to restore freshness to a decaying flower, and therefore our whole resources should be directed towards ascertaining the origin of premature decay in the hope that counteracting influences may be provided for its prevention.

In endeavouring to do this difficulties present themselves at every step, and as soon as one person sets up a theory another knocks it down. Some varieties are more prone to the affection than others is an opinion widely entertained, and often, and probably with truth, expressed. At the luncheon after the Kingston Show Mr. Furze, who won the twenty-five-guinea cup there, recounted his experience. The blooms were examined on a Saturday night, fresh, bright, and beautiful, and hopes were bright and hearts gay; but during the night the damp fiend took possession, and on the Sunday morning nearly all the best blooms—it is always the "best" in these calamities—were ruined. The days had been dry and cool previously; the fatal night was damp and murky. We may, therefore, wonder the less at the great misfortune, but what puzzled the owner of the plants was this—those varieties that had been the first to "go" in previous years were the least affected, while those which usually escaped were the most seriously injured. He regarded the whole question as mysterious, and almost seemed as if he would be glad to give a medal to anyone who could solve the great problem of damping.

It was not the varieties as such that escaped on the one hand, and were overtaken on the other, but the condition—the differing condition—of the florets that caused one bloom to withstand what another could not endure: age, substance, and possibly colour having some influence in the case. The hard florets of Avalanche, for instance, would stand firm against the enemy, whilst the comparatively flimsy petals of Edouard Audiguier would succumb; and the colour of the latter would weaken rather than strengthen it in its contest with damp. Have you not observed that when the first brisk frost sweeps over gardens in autumn, killing not all, but most tender flowers, that the darker coloured are the first and most affected, the whites the last and the least? Call to mind any kinds you like—Dahlias, Verbenas, Asters, Zonal Pelargoniums, no matter what—the whites remain fresh when many of the darks are decaying. Why is this? Is it not because the radiation of heat from dark surfaces is greater than from light, the former thus remaining the colder? The darks both absorb heat and lose it quicker than the lights do, and as it is the last feather that breaks the camel's back, the featherweight by which dark flowers are handicapped when the strain comes breaks them down.

Just as frost must leave its mark the most distinctly on the coldest of surfaces, so must damp, because the colder these are the greater is the precipitation of moisture on them from the atmosphere. More dew falls on dark soil than on light, and it is the condensation of moisture on Chrysanthemum flowers that causes the least resisting—the thin florets, or those of nominally stouter kinds, but commencing to shrink—though this shrinkage may not be seen—to suffer the first and the most by the visitation. In the case of Mr. Furze the previous cool clear weather had so lowered the temperature of his flowers that when the warm night came, with a moisture-laden atmosphere, his blooms were saturated—gorged beyond endurance—by the condensation of dew on their surfaces, and the weakest, not necessarily the smallest blooms, but more likely the larger, would be the first to fail. Some of the small blooms have stouter florets than the large, and it is in the texture of the florets individually, not the size of the blooms, that we must search for the weakest link in the chain.

As evidence that damping of the blooms of Chrysanthemums is, I

do not say in all, but in many cases, the result of moisture condensing on them, and that this condensation is the result of radiation of heat from the house, and consequently from the plants, I years ago found that when radiation was arrested by the use of blinds on the glass, or, better, elevated a few inches above it, on cold, clear nights, that the keeping of the blooms was prolonged. The idea was suggested by a number of plants in a dry vinery remaining fresh, while others in an equally dry greenhouse damped provokingly. The foliage of the Vines arrested radiation from one house, but there was nothing between the blooms and the glass in the other, at least not until the lesson was learned; then the greenhouse blind used in summer to subdue the rays of the sun was drawn down on cold clear nights in the autumn, radiation was checked, and the blooms then kept as well in one house as the other in after years.

As confirming the soundness of practice—though I think on reflection few will dispute it—I am authoritatively informed that a famous Chrysanthemum grower in the South of England has this year had two vineries filled with plants, the leaves being off the Vines in one house, but on them in the other. The blooms under the Vines have kept fresh, while those under the clear glass only damped, the routine treatment as to watering being the same in both cases. Is it any wonder that he will in future use blinds on the roof on nights when he thinks they will be beneficial? Indeed he has commenced their use, and found the practice good.

Then there is the question of affording light shade from bright sun. This is important, and especially when a cloudless day follows several that have been cloudy. It is under those conditions that Grapes "scald," as it is called. It is not scalding, but shrinkage, the result of sudden and excessive evaporation. It is precisely the same with Chrysanthemums; the florets shrink, many beyond recovery, and those that do not collapse are so weakened that a little precipitation of moisture on them is followed by decay.

The same results follow on the shrinking of the flowers from any cause. If the roots of the plants are injured, as many are, by an over-strong dose of sulphate of ammonia or other powerful fertiliser, the supply of nutriment is necessarily checked, and as a consequence the tenderest part of the plants suffer and shrink first—the flowers. Precisely similar results follow if the roots at any time shrivel from drought, damping following the shrinking if there is any moisture in the air to be condensed on the blooms. For preventing this condensation there are times when brisk fire heat is absolutely essential for Chrysanthemums, and scores of blooms that were lost might have been saved if the houses had not been too cold at a critical time. This was for "keeping the blooms back," and they went back with a vengeance.

Mr. Tunnington of Liverpool stated in one of his practical papers the value of boxes of fresh lime in the house for abstracting moisture from the atmosphere, and some gentlemen at Leicester told me they had tried the plan and found it satisfactory.

There is probably more injury done by overfeeding after the plants are housed than by overdryness, though this must be carefully avoided. I have seen more collections kept too wet than too dry, and the damping of the blooms induced in consequence. I could say more, but dare not in the face of fleeting time, and now commend for your criticism, adverse preferably, my views on this subject, for it is only by opposition and the dissecting of theories that truth can be established; and in connection with this subject I am, as you are, a searcher for truth. The question of sports must perforce remain in abeyance.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 10TH.

SCIENTIFIC COMMITTEE.—Present: D. Morris, Esq., in the chair, Messrs. MacLachlan, Michael, Church, H. J. Veitch, Pascoe, Rev. W. Wilks, Drs. Müller and Masters.

Hybrid Rhododendron.—Mr. Veitch showed a hybrid Rhododendron between R. Malayanum, a dwarf species, with the backs of the leaves densely scaly, and a hybrid form named Monarch. The new hybrid had luminous, orange-red flowers, and was almost exactly intermediate in all its characteristics between the two parents.

Deformed Carrots.—Mr. Veitch showed a large number of deformed Carrots, in which the crowns, instead of possessing a single central bud, had branched into several, while the ordinarily single tap-root was also branched into several. The roots had been grown on a dry brashy soil in which there were a large number of stones. During the hot dry weather in summer, the soil was so dry and hard that the roots had difficulty in penetrating it, and hence the energy of growth was directed rather to the formation of supernumerary crown buds and root branches than to the ordinary tap-root. Professor Church corroborated the view that the branching of the roots was due to some mechanical obstacle in the soil. He had found the relative quantity of nitrogenous compounds in excess in such roots. Dr. Masters called attention to the presence of a slime fungus in some cases of this kind.

Seakale roots.—Some roots of Seakale, rotten in the centre and affected with fungus, were also exhibited. The Carrots and the Seakale were referred to Professor Marshall Ward for examination and report.

Effect of Fog on Orchid Flowers.—Mr. Veitch showed flowers of Phalaenopsis and Oncidium, showing how the fog affected blossoms which had not fully expanded, and arrested their further development. The specimens were referred to Dr. Scott for examination and report.

Insect Injurious to Sugar-cane in Barbadoes.—This was sent from the botanical station at Barbadoes, and was referred to Mr. Michael.

Production of Seedling Sugar-canes in Barbadoes.—Mention was made of the discovery of seedling Sugar-canes in Barbadoes, and to the interest attaching to them, as furnishing a possible means of obtaining new and improved varieties. It is singular that up to this time the variations in the Sugar-cane have been derived from sports or bud variations.

Dactylopius (Mealy Bug) in Egypt.—Mr. Morris read a letter addressed to the Director, Royal Gardens, Kew, by Mr. R. W. Blunfield:—

"I see in the August number of the *Kew Bulletin* an interesting account of the *Icerya Purchasi*, and its depredations in South Africa, California, &c. During the past four years our gardens at Alexandria have been invaded by a coccus, which threatens now to destroy all our trees, and is causing the greatest alarm here. I have taken the liberty of sending some specimens in a tin box. Our local savants do not seem satisfied as to its scientific name, though one has pronounced it to be the common mealy bug—*C. adonidum*—which I imagine to be a very much smaller insect. It first appeared about four years ago, when I noticed it in quantities on the under side of the leaves of a Banyan tree, but it has since spread with extraordinary rapidity, and one of our most beautiful gardens, full of tropical trees and shrubs, has been almost destroyed. A breeze sends the cottony bugs down in showers in all directions. It seems to attack almost any plant, but the leaves of the *Ficus rubiginosa* and one or two other kinds of Fig seem too tough for it, and it will not touch them. It seems almost hopeless here for a few horticulturists to try to eradicate this formidable pest, while their indifferent neighbours are harbouring hotbeds of it, and there will have to be some strong measures taken by law to put it down."

The insect in question had been referred to Mr. Douglas, and was said to be an undescribed species of *Dactylopius*. Spraying with kerosene emulsion was recommended, but no remedy was likely to be effectual that was not carried out universally.

Excaccaria Fruits.—Mr. Morris exhibited fruit "shells" of this Euphorbiaceous plant received from Formosa, and which were tied together in necklace-like arrangements by silken strands, the work probably of the larva of some moth.

Canker in Apple Tree.—Mr. A. Dean exhibited a branch of Wellington Apple showing a well-marked illustration of canker in a tree grafted on the Crab stock, and planted on a subsoil of clay. The specimen was referred to Professor Marshall Ward for a report.

Action of Frost.—Mr. A. Dean sent a branch of Keddleston Pip-pin, showing the effect of frost in bursting the tissues and cracking the bark. The injury had probably been done some time previously, though only recently observed.

Fruit of Stephanotis.—From Mr. Denning came a seed-pod of this plant, and which is only occasionally produced in cultivation, owing probably to the absence of the insect adapted to fertilise its flowers.

Cone of Pinus Ayacuti.—Dr. Masters showed a fine cone of this Mexican species, grown in the Isle of Man, by Mr. Farrant, and made some comments on the species, which is somewhat tender in the neighbourhood of London.

PARKHALL, STIRLINGSHIRE.

It is not often that when one enters a somewhat obscure place like Parkhall that such a display of glass erection for horticultural purposes meets the gaze, and more than one has been struck with amazement at the immense amount of means applied to the production of fruit, and the success which attends the judicious management of Mr. Murray, Mr. Learmonth's skilful gardener. Passing over a piece of rising ground gigantic ranges meet the view; on the left two large span-roofed houses, 100 feet long, 24 feet wide, and about 16 feet high each are passed, and those who have had the privilege of looking into them during the autumn months have witnessed sights of Grape-growing seldom met with. The kinds grown in these fine structures are chiefly for late supplies. Those most worthy of special mention are unusually fine Gros Marocs. We have seen finer bunches of this kind at Parkhall than anywhere else. Gros Colman (extra fine at present), Gros Guillaume, Alicante, and Mrs. Pearson are also extensively represented—bunches large, many of extra size, and finely finished. The last-named kind is much valued at Parkhall; the quality is rich and refreshing. Fine exhibition Grapes have often been taken from Parkhall, and when the gigantic bunches, so handsome in form, are seen among the competition lots they are easily recognised. The Muscats which have been tabled of late years show fair examples from the general stock of Grapes. Such are not the results of light cropping, as the whole of the Vines are heavily cropped, some of them with about a score of these huge bunches hanging on them. In one of the fine houses referred to there were nearly 1000 bunches hanging. This is only a small portion, however, of the fruit-growing accommodation, as looking further ahead ranges are seen on both sides of the pathway, and the principal one is over 400 feet in length, enclosing three sides of a vegetable garden—wide roomy houses, where Grape growing is finely represented—not on Vines with the insignificant crops of half a dozen bunches, but loaded, as they should be, with three times the quantity one may see on some Vines, and quality of the first rank, while the popular late kinds are well represented. The favourite old Black Hamburg holds a prominent position, and the best Hamburg at the late Caledonian Show held at Edinburgh were from these vineries; but that is not saying much, as what Mr. Muir states is only part of the truth, and most cultivators

which we meet endorse very strongly his remarks. The time was when no other Grapes were supplied to well-appointed tables than Hamburgs (as blacks) up to Christmas, but such is now the exception. At Parkhall many other interesting objects may be seen. The quantities of Peaches, Pears, Plums, &c., grown under glass, and the long low ranges of span-roofed houses for the growth of Cucumbers, Tomatoes, &c., has given Parkhall a name among the leading establishments of the north.

—M. TEMPLE.

COPPER SULPHATE AGAINST FUNGI.

EXPERIENCE during the summer of 1889 encourages the belief that we have in the solutions of copper sulphate a defence against many of the fungus pests which so seriously threaten the prosperity of our agriculture. In 1888 the efficacy of what is known as the Bordeaux mixture as a preventive of mildew and black rot of the Grape was fully proved. This year experiments have taken a wider range, and many of the so-called diseases of plants have been successfully treated. The Apple-leaf rust (*Roestelia pyrata*) succumbs to an occasional spraying with the Bordeaux mixture. The Quince blights (*Morthiera Mespili* and *Hendersonia Cydoniae*) are likewise prevented, and the fungus which causes the blight of leaves and cracking of fruit of the Pear may now be regarded as under the control of the copper solutions.

The prevention of this Pear fungus, *Entomosporium maculatum*, is, perhaps, of greater advantage in the nursery than in the orchard. Where the disease is epidemic in the nursery it places a veto upon the budding and grafting of young Pear stocks. The leaves are destroyed just when their aid is essential to the vitality of the bud or scion. By spraying the nursery rows every three weeks during the season of growth with the Bordeaux mixture the leaves are preserved in health and the success of the grafter's labour is assured.

But in addition to this use of the copper solution it is found to be preventive of the Tomato blight (*Macrosporium Solani*), and (which is of far wider importance to our agriculture) it prevents the rot of the Potato, *Phytophthora infestans*. In treatment of this disease of the Potato plant some of our experiment stations have this year been quite successful. My experiments in this line have had gratifying results. For many years in this region of southern New Jersey every attempt to grow the Peachblow Potato has been a failure. At about the time the plant is in blossom and the tubers are say one-fourth grown, this deadly blight invades the Potato field and sweeps over it like fire. I have had an acre of Peachblows showing every sign of thriftiness and giving promise of a heavy crop, and in one week from the time of the appearance of this blight every plant was dead or dying. It is the prevailing opinion here that the Peachblow Potato is a variety which is "run out," and its culture has been generally abandoned.

Happening to see, last autumn, a few bushels of small Peachblow Potatoes for sale, I bought them for the purpose of giving them another fair trial under the protection of the Bordeaux mixture. Last June I ploughed a Clover sod between the tree-rows of an orchard, and there planted these Potatoes in five equal plats of three rows each, manured in the row with the Mapes Potato manure at the rate of half a ton per acre. The plats lay side by side, running north and south. When the plants were a foot high, and before they blossomed, I began to spray some of them with the Bordeaux mixture, and repeated this operation every two or three weeks thereafter until nearly the last of September. The times of treatments were regulated somewhat by the weather and the frequency of heavy rains. At any rate, I aimed to keep leaves and stalks on the sprayed plats pretty thoroughly white-washed with the copper sulphate solution, so that its presence was always visible all over the plants. Whenever a drenching rain washed off the application it was renewed as soon as possible. I made the treatments with the portable Eureka spraying machine. I thus sprayed plats 1 and 2, left plat 3 (the middle plat) untreated, and sprayed also plats 4 and 5.

About the time the plants blossomed the middle plat (No. 3) was, as usual, struck by the blight, and in two weeks all of the Potato tops on this plat were dead and dry. The plants on the other plats were green, and growing as vigorously as could be wished. They remained green and growing until killed by frost in November.

I then dug and weighed separately the total product of each plat. Plat No. 1, sprayed with Bordeaux mixture, yielded 346 lbs. of fine large marketable Potatoes, which were sold as soon as dug for a dollar a bushel. Plat No. 3, not sprayed, yielded only 164 lbs. of small-sized tubers, scarcely one of which is marketable.

The diameter of the largest tuber on the untreated plat was 3 inches. The diameter of the largest on the treated plat was 5 inches. There is a marked difference in the cooking of Potatoes from the unsprayed and from the sprayed plats. Those from the plat not treated are immature and "soggy." Those from the treated plats are mealy, and have all the excellence for which the Peachblow Potato was formerly esteemed.

I have saved 10 or 15 bushels of these Peachblows to plant next year, in the confident expectation of a crop of 350 bushels of Potatoes per acre. Under the unfavourable conditions in which these experimental plats of Potatoes were grown (between rows of trees 20 feet apart and twenty years old) I did not expect a large crop; yet the yield of the treated plat (No. 1), 346 lbs. from 225 hills, is not bad under the circumstances, being about 125 bushels per acre.

Of the Bordeaux mixture employed the formula is 6 lbs. of pulverised sulphate of copper (blue vitriol), dissolved in four gallons of hot water; 4 lbs. of fresh lime, dissolved in four gallons of cold water; mix the two

solutions, and dilute with cold water to make twenty-two gallons of liquid.

I believe, however, that the ammoniacal solution of carbonate of copper will be found as efficient a fungicide as the Bordeaux mixture, and it has the advantage of being more readily prepared and more easily distributed in spray. Its formula is carbonate of copper, 3 ozs.; ammonia, one quart; mix. The copper carbonate will dissolve almost at once in the ammonia liquor. Then dilute this mixture with cold water to make twenty-two gallons of liquid.

From sundry experiments which I have made this year, and which I have reported in detail to the United States Department of Agriculture, I conclude that it is the copper in solution which is specifically antidotal to fungus germs, and not the other component, sulphuric acid, of the sulphate. In experimenting on treatment of the black rot of the Grape I tried quite extensively a mixture made similarly to the Bordeaux mixture, only substituting sulphate of iron (copperas) for the copper sulphate. This mixture had no effect whatever in prevention of Grape rot. I saw some benefit from its use, however, in prevention of leaf mildew, and it is quite likely that it may be found sufficiently effective for treatment of the blights of the Potato and Tomato. It is much cheaper, pulverised sulphate of copper costing about 8 cents. per lb., while copperas costs only seven-eighths of 1 cent per lb.

Further experiments are required to teach which of these fungicides may be the preferable one, and for what uses. Certain fungi will endure with impunity applications under which others will perish, and certain varieties of plants are damaged by chemical solutions which do not harm others. Thus, the Tomato plant will not tolerate a spraying Bordeaux mixture as it is used for the Potato. The mixture for the Tomato must be reduced in strength at least one-half. Nor will *Vitis æstivalis* endure spraying with copper sulphate mixtures, which do not injure the vegetation of *Vitis Labrusca*.

My counsel to those who purpose engaging in these vegetable therapeutics is to go slow. When all ready for spraying try only a few patients at first, and wait to note the effects of the medicine. Otherwise there is great danger of learning pathological wisdom as did the quack doctor who found out in his practice that "what cured the shoemaker killed the tailor."—A. W. PEARSON, *Vineland, N.J.* (in *American Garden and Forest*).

LIQUORICE (GLYCYRHIZA GLABRA). ITS CULTURE AND USES.

PONTEFRAC and its immediate neighbourhood is probably the only district in the kingdom where this plant is grown to perfection. Liquorice requires a great depth of soil, as the length of the roots, which is the only valuable part of the plant, varies from 3 to 6 feet in length, and I have seen it 9 feet in length.

Pontefract has ever been noted for its rich fertile soil, as well as its pure bracing atmosphere. Fruit and vegetables are produced in abundance, and the excellent quality of both is demonstrated by the ready sale effected at the neighbouring markets. The ingenious Thomas Fuller has styled Pontefract "the garden of England," and the poet Lund, in the early part of the century, expressed himself in the following lines:—

"If situation hath a power to please,
If air salubrious can give us ease,
If spacious streets and handsome houses joined
Can satisfaction raise within the mind;
If noble ruins, mouldering fast with rust,
Where ancient monarchs mingled with the dust;
If gardens all around can please the eye,
Embellished o'er with Flora's painted dye;
If peace and plenty, which doth here abide
(Laying all pique and prejudice aside).
If charms as these are worthy of my song,
Come here ye grave, ye gay, ye old and young—
Come here and view the subject of my theme,
Confess that Pomfret's worthy your esteem."

When the Liquorice plant was first introduced is somewhat uncertain, it having been cultivated for a long period, but never to the extent it is at the present time. There is now a great acreage under cultivation, giving employment to a large number of people. Any approximation to this number would be difficult, inasmuch as during the two first years the spaces between the beds are utilised in growing vegetables, generally early Potatoes the first year and Cabbages the second. The protection of the Liquorice beds enables these crops to come to early maturity; the extreme fertility of the soil, with these advantages, produces a splendid quality. The land for the culture of Liquorice is worked entirely with the spade. After the two first years the Liquorice requires the whole space of the land, inasmuch as it makes too much top to allow of anything else being grown. The fourth year brings it to perfection.

It is planted in raised beds on rows 2 feet apart. Three hundred of these beds constitute a quarter. These quarters are planted

year after year successively, thus each year brings one quarter to maturity. Condition of seasons favourable to the plant:—Should the two first seasons after planting be moderately wet, and the two latter inclined to dryness, the result is so much more satisfactory. The season for planting is the early part of April; the season for taking up or trenching out is from the middle of September onwards.

After the root is taken up it is stored in cool warehouses or cellars in sand, until opportunity offers for dressing. This consists of taking off all small fibrous roots, buds, and runners from the rod. The small fibres are ground up into liquorice powder, and used for medicinal purposes. The buds and runners are then faced and preserved in sand, ready for planting. The rod is pounded by machinery, and the saccharine extract is refined and made into the

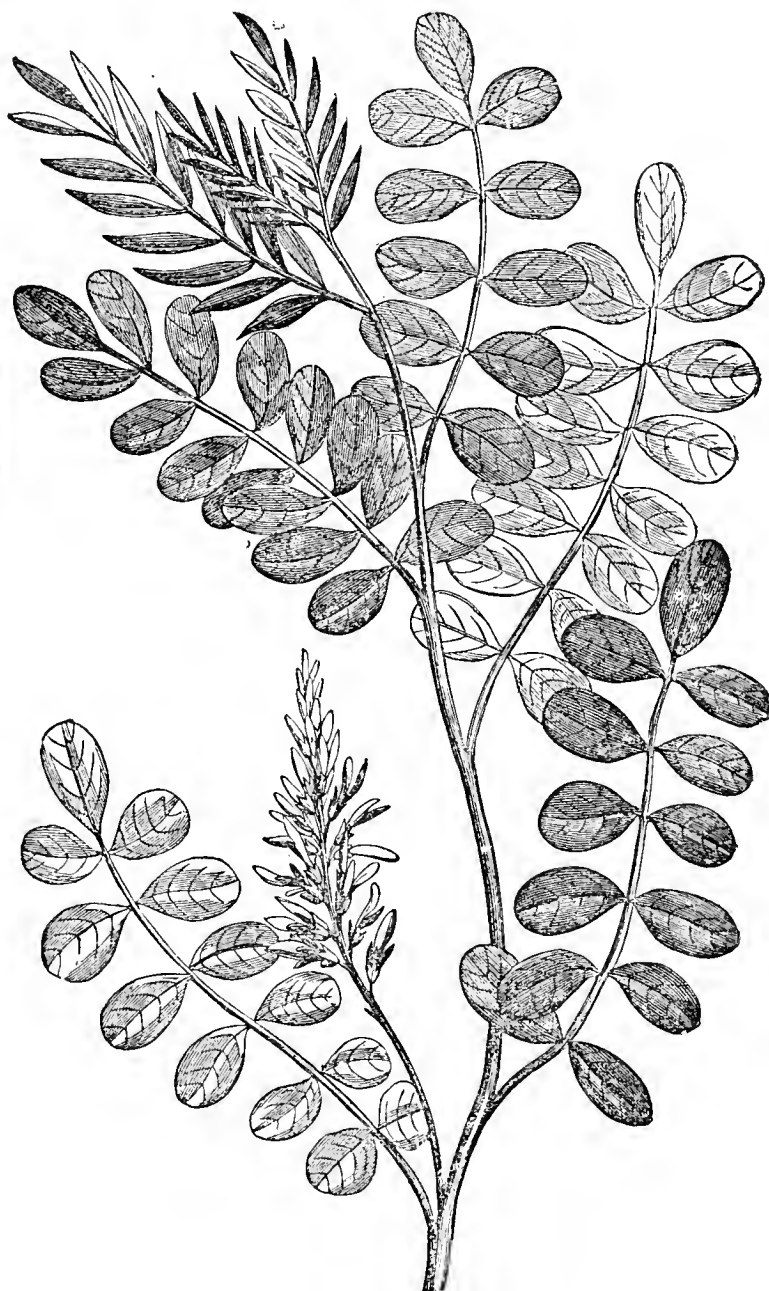


FIG. 69.—LIQUORICE (GLYCYRHIZA GLABRA).

celebrated Pomfret cakes. This industry is the staple trade of the good old town of Pontefract.—JOHN HILLARY, JUN.

EUPATORIUMS.

THE notes by Mr. Muir and "W. S." on these plants are quite seasonable. It is, indeed, a wonder that these plants are not more numerous cultivated. There is one objection to the earliest flowering variety which commences in October, and which I have always known by the name of *E. odoratum*—that is, the flowers are a dirty white, which is certainly a blemish. I know ladies object to this simply on account of its colour. Whether or not this is the correct name the flowers answer very well to the name, but although scented it is not of the most agreeable character. For freedom in flowering and the time the plants last in bloom this variety is perhaps the most useful, but for making a greater show I prefer *E. Weinmannianum*, although this comes in at a time when other flowers are more numerous. We have

plants of *E. odoratum* which have supplied us with flowers annually during the last nine years, and they promise to go on as many more.

After flowering is past the current year's shoots are pruned to within one or two eyes of the older wood, the plants are then placed in a cool house for a time; in the spring they are placed into a Peach house, the trees of which are not forced, but allowed to come on quietly. The syringing necessary for the Peach trees suits the *Eupatoriums*, inducing abundance of shoots to be made. When the shoots are 2 inches long the point of each is pinched out to induce additional growths. When all fear of frost is past the plants are stood out of doors in a sunny place, the pots plunged in ashes to lessen the supply of water required at the roots. When the shoots have grown 3 or 4 inches they are clipped with the hedge shears; afterwards they are allowed to grow away at will. The dwarf branching variety referred to by "W. S." I have always known as *E. riparium*; it is the whitest of the three, but owing to its straggling habit is not so useful in a cut state, as the flower spikes are crooked, but as a pot plant it is capital. This has the darkest coloured foliage of all; the stems, too, are dark red.

There is yet another *Eupatorium* not mentioned by either of your correspondents. I allude to *E. Candollei*, which is often called a white *Ageratum*, owing to the flower heads being much like an *Ageratum* in formation. This flowers in March, is pure white, is more bushy in growth than any other sort, and is best raised from cuttings annually in April, pinched three or four times, and flowered in the greenhouse in 6-inch pots.—E. M.



FRUIT FORCING.

FIGS.—*Early Forced Trees in Pots.*—Early Figs are best secured from trees in pots, as a slight warmth at the roots is highly beneficial; but even this has its disadvantages, as when the heat at the roots is 70° or more during the early part of the forcing process the growth is too rapid; therefore see that the heat at the base of the pots is not more than that until the leaves are unfolding, when the temperature may be 75°, or even 80° at the base of the pots. The temperature of the house should be increased gradually to 60° at night, 65° by day by artificial means in severe weather, 5° more in mild weather, 70° to 75° with sun heat and moderate ventilation, closing at 75°; but be careful not to bring on the growth too rapidly, especially in dull weather, as foliage produced under such conditions is not of stout texture, but thin, and liable to be scorched under bright sun. Water in a tepid state must be applied to the roots as required, and the trees and house must be syringed morning and afternoon, the latter early enough to have the foliage dry before nightfall, damping the house later in the day if the atmosphere has become dry.

VINES.—*Early Forced in Pots.*—Attention must be given to the fermenting materials in the pits, and if the pots are placed on pillars frequent additions of material should be made as the heat declines. The heat about the pots must be kept between 70° and 75°. The temperature should have been gradually raised after the buds commenced swelling from 55°, so as to have it about 60° to 65° by the time they are coming into leaf, allowing an advance of 5° to 10° by day, carefully admitting a little air at 70°, and close early. Disbud as soon as the bunches can be detected, reserving the most promising. Stop the shoots about two joints beyond the bunches. The laterals or growths on the current year's wood should be removed up to the bunches, and those beyond allowed to extend as the space permits without crowding, it being essential that the foliage retained have full exposure to light and air, and no more than that encouraged. Usually a couple or three joints of lateral extension are sufficient for fruiting Vines in pots, the crop preventing much further extension. Where fermenting materials are employed the necessity for the application of moisture will not be so great as where the heat is obtained solely from hot-water pipes. Evaporation troughs should be filled with liquid manure or guano water, 1 lb. of guano to twenty gallons of water, which may be employed for damping the floors, &c., after closing the house, or early in the afternoon.

Early Forced House.—The buds of Vines started last month now show signs of swelling, and another good watering should be given the inside border at a temperature of 85° to 90°, and in the case of old Vines apply liquid manure freely. From the time the buds commence swelling raise the temperature 2° or 3° in the course of a few days, not exceeding 60° to 65° by artificial means until the Vines have produced their leaves. In quick forcing and where the Vines are thoroughly established and have had a rest, growth may be induced by a brisk moist heat of 70° to 75°, continuing it until the eyes have fairly started growing, when the temperature should be allowed to fall to 60° to 65° at night, with 5° to 10° rise in the daytime, it being important whilst the foliage is being made that a moderate temperature be employed, in order to secure short-jointed wood and stout well-developed foliage. Young Vines that have not been forced early will need to be brought down to a horizontal position to ensure their breaking regularly.

Some well-fermented short stable litter and leaves placed in ridges on the inside border will afford a genial moisture and warmth, and lessen the necessity for frequent syringing. See that the fermenting material on outside borders are not cooled by snow melting on them, and lose no opportunity of turning and adding fresh material as may be required.

Cherry House.—To ensure a supply of ripe Cherries from the middle of April and onwards houses which are to be employed for that purpose must now be closed. Be sparing of fire heat at the commencement, not employing it unless absolutely necessary to maintain the temperature at from 35° to 40° at night, and 40° to 45° by day, ventilating when the temperature is about 50° to 55°. Close the house at 50°. Syringe the trees and available surfaces early on fine afternoons, so as to admit of the buds becoming dry before nightfall. The border will be sufficiently moist through the removal of the roof lights, if not it must have water to bring it into a thoroughly moist state. Trees in pots if at all dry will require repeated supplies of water to secure the thorough moistening of the soil to the base of the pots.

STRAWBERRIES IN POTS.—*Earliest Forced.*—When the crowns commence swelling and the trusses appear the temperature may be advanced a few degrees by day. A temperature of 50° to 55° at night is sufficiently high for the present. Syringe the plants gently in early parts of fine afternoons, which will be highly advantageous, but avoid a close and very humid atmosphere. Keep a sharp look out for aphides, and if any appear fumigate the house on two or three consecutive calm evenings, having the foliage dry, or at this time of year it may be practised in the evening and again the following morning.

Successional Plants.—More plants may be placed in a house from which frost is excluded, the decayed leaves being removed, and the surface soil loosened and top-dressed with horse droppings rubbed through a sieve. Attend to the drainage, and if necessary renew it, and wash the pots. The plants may be introduced during the next three weeks to a house where forcing is carried on, as that of a Peach house, vinery, or Strawberry house, if such be available. Noble, La Grosse Sucrée, Vicomtesse Hericart de Thury, Sir Joseph Paxton, and President are suitable varieties. Plants for introducing later on will be quite safe in their quarters out of doors plunged in ashes to the rim, and a light covering may be given of dry fern or litter in severe weather, removing it in mild weather.

KITCHEN GARDEN.

FORCING.—This should now be general, and as there are indications of the winter being severe, deficiencies that may occur in open air supplies must be met by forced produce.

CHICORY.—One of the most useful of all winter salad plants for forcing. It is easily managed, and the tender heads it throws up when forced are very valuable. The roots are not unlike white Carrots. The top growths die almost away in November, and if the roots are dug up in December, potted in groups of six, eight, or ten into 9-inch or 10-inch pots, and plunged or placed in a gentle heat in a partially dark place, fine heads of crisp cream-coloured leaves will be produced in a fortnight or so. A warm Mushroom house is a good place to force it in, or if they are placed in a Cucumber pit, and a pot of the same size as that containing the roots is placed upside down over the full ones, the produce will be well blanched. A large number of pots may be filled at once, but if introduced to heat eight or a dozen at a time, a constant succession may be kept up.

RHUBARB.—This may now be forced in the ground where it grows. Some old casks with the bottom removed answer well for protectors. Turn one of these upside down over each crown, bore a hole in the upper end, and surround the cask with a firm bed of fermenting material. If the casks are about 3 feet high make the bed up to the level. Old cases may be used in the same way, only if not more than 2 feet deep the sticks when they push up may be injured by coming in contact with the top. It is still up-hill work to force Seakale in this way, and until the turn of the year the roots should be dug up and forced as previously directed. The five-year-old Asparagus roots we are forcing are proving very remunerative, and a succession should be maintained by putting from twenty to fifty roots in to force every fortnight, or as demand suggests.

KIDNEY BEANS.—Our present plants of these are not very fruitful, as December is one of the worst months in the year, but the time is not far distant when they will give better returns, and as it takes them from nine to ten weeks to get into pod, seed should now be sown for late January and February fruiting plants. These cannot be grown carelessly at the present time, and the only sure way of their succeeding is to sow the seed in 3-inch pots and place them near the glass in a temperature of 65°. Six, eight, or not more than ten seeds may be placed into each pot, using rather strong and rich, but well drained, soil. When the plants are about 6 inches high each potful can be transferred to a 6-inch or 7-inch pot, and from five dozen, or thereabouts, many dishes of Beans will be gathered.

MINT AND TARRAGON.—Where those are valued green at mid-winter a quantity of roots of both may be lifted, potted, and plunged in a bottom heat of 80°. We also place them into cutting boxes, put a little light soil over and under them, and force them in that way, but they do not become ready so soon in the boxes as in the pots. Examine young Cauliflower plants, remove all decayed leaves, and if they are inclined to damp off sprinkle a little sand between them. Cut and store Broccoli as fast as they form, as they will not bear the slightest frost. Protect tender vegetables of all kinds from frost.

THE BEE-KEEPER

QUEEN REARING IN RELATION TO HYBERNATION AND WINTER DYSENTERY.

(Continued from page 497.)

SOME of the plans followed in America are scarcely creditable to such an intelligent nation. Here is a plan advocated in a book by G. M. Doolittle, a great breeder of queens and a "real Yankee," a regular "Down Easter." He gets a number of sticks, soaks them in water, then dips them in melted wax time after time, but each time not quite so much as previously. When done enough he fixes their ends to flat sticks, and when cold he can withdraw the round sticks he has used as moulds, as, being wet, they will leave the wax. The flat stick is filled with these cups, side by side; then he puts in each a little royal jelly that he has previously collected from queen cells, and a just hatched worker larva, then these sticks are fastened in frames, and hung in a stock that is inclined to build queen cells, preferring one with the swarming fever on. The bees feed the worms and finish off the cells, and when sealed he removes them, cuts off the cells, giving them either to nuclei, or hatching them in a nursery. And he thinks by doing this he is improving the breed of bees. If his time at the busiest part of the season is of no more value than that of bees, that he can seriously hope to compete with them, where the price of labour is admitted to be high, I think we cannot do better than flock over to America. This reminds me of an anecdote I saw the other day, where down in one of the Southern States they had replaced mules on the tramway with motive power, when an old negro exclaimed, "What a wonderful people those Yankees were! Twenty-five years ago they freed the nigger, and now they have freed the mule." It is certainly reserved for a Yankee to seriously try to free the bees of their natural labour by substituting their own.

Whether Doolittle succeeds or not in his queen-rearing may be judged by his losing on an average about half of his bees every winter; then he selects the best in the spring, sometimes only ten stocks out of a hundred he had in the fall, which he devotes to honey getting, all the weak and sickly ones being devoted to rearing queens; he probably makes his stocks up to 100 again in the fall. Instead, however, of estimating his honey crop *pro rata*, according to the number of stocks he had in the fall, he simply does so on the few best he has selected, which enables him to boast of an enormous crop of honey of an average amount per colony, spring count—not the ten hives, mind, but all their increase, which is seldom less than 100 lbs. "per colony." According to his own showing it is really less than 10 lbs. per stock, while I have made the crop to be less than 2 lbs., and nearly every stock required 10 to 20 lbs. of food to winter it, while all the time he was boasting of "75 lbs. per colony." Such statements do to puzzle people who cannot think for themselves; but the most curious part of the matter is Doolittle is always advocating a strict adherence to Nature, though the only natural plan he follows is rearing his queens in stocks with the swarming fever on. In my opinion the reason he does not lose all his bees every winter is because his frames being 11½ inches square he always has his brood nest in a close compact shape, so that the cells do not run such a risk of chilling if cold weather sets in as they would if he used the Langstroth frame. This again is not without its influence in enabling him to harvest large crops of honey from those hives he selects for the purpose.

It was Heddou who started the "pollen theory" to account for winter dysentery, just because he ascertained that such bees voided undigested pollen. To prove his position he fed a number of stocks up for winter on pure sugar syrup in clean combs devoid of pollen, which lived through the winter and came out satisfactorily in the spring, while many of those with pollen in their combs died. He held this up as absolute proof, though a little reflection should

have told him that he only provided his bees with a more digestible food.

To understand this subject better my articles in the Journal for May 16th (page 407) and July 18th, 1889, must be read as well as this. I cannot yet say if bees keep up one uniform temperature in the cluster while hibernating in winter or not, though I think they do; nor what that temperature is, which I think is about 60°. My bees are all now hibernating except one stock with the queen developed from a fertile worker egg which received a slight chill while in the cell, and was otherwise not reared as well as my other queens.

To sum the matter up briefly, I advise the following course—breed queens from the best stocks. Let them be reared naturally whether under the swarming fever or not. Never open a hive to look at cells being reared, nor think of cutting one out. If the selected stock swarms catch the old queen, or let all or nearly all the bees go back to attend to the maturing cells, always remembering that Nature has designed them to be kept quite warm, so that there can never be too many bees in the hive. They will come outside if no room within. If the weather changes to cold, wet, or otherwise bad feed at once gently and continuously until it takes up again, to cause the bees to keep up the heat of the hive, otherwise they would let it go down too low, and thus spoil all the queen cells. If young queens are wanted keep taking them in the swarms, and let the bees go back, to come off again with fresh ones. If many queens are wanted rear them under the swarming fever, when you will have from ten to 100. If you only want one you can rear her in any very strong stock, but be content with one, as seldom will there be more than two cells, and you cannot cut one out without spoiling both. If you wish the bees to be profitable take care that they have sound constitutions, always remembering that such will enable them to withstand all kinds of failings in management and the weather. And always remember that the queen is the most important part of a hive of bees, and must always be considered the most valuable part.

I may also touch on the question of clipping queens' wings. I used to be opposed to the practice, as I found bees had such a desire to supersede them. I have again reverted to it, as I can thus catch the old queen in a first swarm, and soon have the bees back again; while if I am not present, and the hive is on a stand that overlaps, so that the queen cannot get back, she will be found on the ground under the entrance, as she is attracted by noise of the returning bees, and tries to get back. Another point is, if you clip a queen as soon as she begins to lay you can always tell if she has been superseded, which often happens when the stock is not as strong as desirable for queen rearing, so that such queens should be replaced. Thus, although clipping has several drawbacks it also has its advantages when rearing improved bees.

I have now explained the matter, and if it is followed it will not be long before a marked difference will be noted between the bees as now existing, and those being cultivated, and which will soon be known as "wild bees." Of course there is the difficulty about the drones; if each bee-keeper will breed these as he is advised about his queens, there will not, however, be much trouble on this score.—A HALLAMSHIRE BEE-KEEPER.

GLASS SECTIONS.

ALLOW me to tender my best thanks to "A Hallamshire Bee-keeper" for his brief and practical exposition of the patent laws; also for the trouble he had been at in preparing drawings to illustrate the making of glass sections, which doubtless would have been published but for the good reason indicated. If ever I had a serious intention of cheating the inventor of the metal corners by "any quibble or sophistry," the idea had vanished from my mind before I knew so much of patent laws as I now do. While the note I sent to the Journal was lying at the office waiting for a corner, I have been working and thinking, and have come to much the same conclusion as your correspondent—viz., that they are quite as well without the tin corners. I hope "A. H. B. K." does not include me amongst those who say they "knew the dodge before," or who laughed at him. My motive was a desire to

learn, and I hope the same was shared by most bee-keeping readers of this Journal. I may say that I have found what "A. H. B. K." told last year quite correct as to the cost of glass. I can make them from glass cut into squares for glazing purposes at less than 3s. per 100. I make them as a pastime, and for this new pleasure in bee-keeping your correspondent has the best thanks of—A SUSSEX AMATEUR.

TRADE CATALOGUES RECEIVED.

Ewing & Co., Havant.—*List of Nursery Stock and Roses.*
 J. Cocker & Sons, Aberdeen.—*Catalogues of Bulbs and Roses.*
 Bruant, Poitiers, Vienne, France.—*General Catalogue.*
 Hogg & Wood, Coldstream, N.B.—*Catalogue of Nursery Stock.*
 C. Toop & Co., Stepney Green, London, E.—*List of Appliances.*
 E. F. Such, Maidenhead.—*List of Chrysanthemums.*
 T. Methven & Sons, Edinburgh.—*Catalogue of Seedling and Transplanted Forest Trees.*
 Wm. Gordon, Twickenham.—*Catalogue of Orchids and Lilies.*
 Little & Ballantyne, Carlisle.—*List of Trees.*
 J. Galvin, Roscommon.—*Catalogue of Trees and Shrubs.*
 Sutton & Sons, Reading.—*Amateur's Guide in Horticulture for 1890 (illustrated with coloured plates).*
 W. K. Woodcock, Syston, near Leicester.—*Catalogue of Chrysanthemums.*
 C. Fidler, Reading.—*Catalogue of Vegetables, Seeds, and Potatoes.*
 R. Sydenham, Tenby Street, Birmingham.—*List of Vegetable and Flower Seeds.*
 J. Veitch & Sons, Kings Road, Chelsea.—*Catalogue of Seeds for 1890.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Coloured Potatoes (Cottager).—The Dean and Vicar of Laleham are good round, and Mr. Bresee and Edgcott Purple good kidney varieties, both for exhibition and table use.

Eucharis Flowers (A. S., and C. F.).—We frequently see examples of Eucharis flowers with more than the normal number of petals exactly like yours. It is a tendency to the double condition, and is probably due to the strength of the plants.

Painting Hot-water Pipes (H. C.).—It is not necessary to add anything to the lampblack and boiled linseed oil for the purpose. Choose a suitable day when the pipes can be gently heated and the ventilators opened if you have plants in the house.

Phalænopsis amabilis and Calanthe Veitchi (C. L., Bristol, and J. P., Beaconsfield).—A Phalænopsis panicle 4 feet 7 inches long with twenty-nine flowers is fine, and the plant is well treated. The Calanthe with a pseudo-bulb 11 inches long and a spike 4 feet 5 inches high must have been strongly grown. It is very good.

Horn and Hoof Shavings for Vine Border (J. B.).—They are excellent for mixing with loam for a Vine border, and if you add also some road ashes, you will have a very suitable compost. Horn contains phosphate and sulphate of lime with phosphate of magnesia, and differs from bones in containing a considerable proportion of sulphur. Horn and hoof parings form a somewhat more powerful manure than bones, and are lasting in effect, through the slow decomposition of the matter in them, which appears to be of the nature of coagulated albumen.

Emigrating (R. H.).—Unless you have friends in the colony who would tender you some assistance in the form of hospitality and advice, we should consider the sum you name inadequate to start with, though we have no doubt many persons have started with less, and after struggling with adversity and enduring privations at which they would seriously grumble at home, have eventually "done well." In an article on another page you will find remarks on the subject, and addresses from which you can gain information that may possibly be of service to you under the circumstances.

Peach Tree Buds Falling (Zero).—The letter to which you refer did not reach us. The buds fall from the trees from various causes, such as drought at the roots at some time anterior to the misfortune occurring, red spider on the foliage in summer, a sudden change of treatment from full exposure to a close house, a paucity of active fibrous roots in good soil, also through overcropping. There is nothing in your letter to suggest to which of those causes the evil is due in your case. You may have excited the tree too soon and too suddenly. If you like to send a sample of the wood, and give more particulars as to the age of the tree, also state when it was lifted and started, with the temperature maintained, we shall be glad to give the case further consideration. Several letters fail to reach us through being incorrectly or insufficiently addressed.

What is a Good Crop of Tomatoes (S. S.).—You ask "What is a fair good crop of Tomatoes in pounds weight per plant when the plants are grown to a single stem upright to a height of 12 feet, and under glass, planted out as strong sturdy plants out of single 5-inch pots at the beginning of June—that is, what should fairly be expected under such circumstances?" Though we know that 20 lbs. of fruit, and occasionally more, have been gathered from each of a number of plants grown as suggested, the weight, we suspect, exceeds the average. This, according to the Chiswick results with several hundreds of plants, is about 15 lbs. They were, however, planted in the best of condition about a month sooner than yours, and grown practically without fire heat, though a little may have been employed for ripening the later fruits in the autumn. We shall be glad to have the experience of other cultivators on the weight of their Tomato crops.

Keeping Pears (E. F.).—Mr. Bardney writes:—"We are careful to gather the fruit perfectly dry and store it at once as the work of gathering proceeds. If we use the large boxes to which I referred another year we shall take them to the tree and pack them as the fruit is gathered. We find that, although the paper in which the fruit was packed, and the paper shavings become damp, when such large boxes as I described are filled, no harm appears to result to the fruit. But we prefer the smaller boxes, and then the dampness is not so perceptible. I have not tried the sand, and therefore really cannot say whether it is better than the paper shavings or not. It is worth trying, however. I have been thinking lately about cork dust, such as is used for packing Grapes and Tomatoes. I saw quantities of the latter this season sent from Teneriffe that arrived in excellent condition, and are likely to considerably reduce the price of home grown produce early in the season."

Plumbago capensis to Flower in August (M. N.).—The plant should be kept cool and dry, but not so dry as to cause the wood to shrivel, until early April, when it should be pruned, and having the ball reduced about a third be repotted. Growth may be encouraged by syringing, but the moisture at the roots must be moderate until the roots are working freely in the fresh soil, when it will be required more freely, and when the pot is filled with roots afford liquid manure once or twice a week. The plants may be started in ainery or Peach house, and after some little growth is made it will be best given a light airy position in a greenhouse or conservatory. Its free flowering depends on the ripening of the wood. If that is strong, short-jointed, and firm it will flower freely enough. It should flower about the time you require, but plants for special purposes require judgment in keeping it cool if too early, or placing in heat if not sufficiently advanced.

Lime for Plum Trees—Varieties of Fruit (Plum).—We cannot possibly tell you whether a "couple of shovelfuls" of lime would suffice for each tree, as you give no indication whatever respecting either age or size. Cut out the cankered parts as you suggest and spread lime half an inch thick as far as the roots extend, then mulch as you propose with good manure. But it is useless placing fertilising material close to the stems of trees alone where there are few fibrous roots; the best of these are some distance away, and support should be applied where it can be appropriated. All the varieties of fruit you send are good, but only three out of the eleven Apples are spelt correctly, and if we were to print the names as you have sent them they would cause some amusement. We give one as a sample—"Ecklinvil" for Ecklinville. Before attaching names to the trees you had better consult a fruit catalogue, and not attempt to improve on the names you find in it. The Blenheim Pippin is a fine Apple, but somewhat slow in bearing freely, and Golden Noble is not very quick in that respect, but when they do bear well they are profitable.

Fruit in Boxes (St. Julian).—See Mr. Bardney's reply to another correspondent. Paper shavings are the trimmings of paper that are plentiful in printing and bookbinding establishments, and cost little. The boxes will do if the lids are tied down tightly, but ordinary fastenings or even tacking are better and more quickly applied. Both Apples and Pears will do in the same room, and both keep well in sweet boxes or barrels without any packing, and many of them better so than on shelves. The time for examining fruit in boxes and introducing to heat for ripening depends on the varieties and the supply required. When paper other than shavings is used any that is thin, white, and cheap is suitable. We do not approve of old newspapers, as some of the ink employed in printing impairs the quality of the fruit. The choicest samples are wrapped in paper by some persons, who find the plan satisfactory; others place the fruit in alternate layers with paper, but by far the greater bulk is packed in barrels without anything, but we repeat they must be sweet. See Mr. Wright's work on "Profitable Fruit Growing," price 1s.; post free from this office, 1s. 3d. The subject of storing fruit will perhaps be alluded to again.

Galls on Gardenias (R. S.).—The galls upon the roots sent appear to be the abodes of a mite, one of those which, unlike most of its brethren, goes through distinct transformation. These are at present in the nymph condition, but would develop fully in spring, and then proceed to scatter themselves and propagate; but their history is at present very obscure, and they generally are so sluggish that their travelling about seems unlikely, yet this must occur when fresh galls are produced. It is a species belonging to the genus *Tyroglyphus*; this, or one closely allied to it, has been taken in galls upon Vine roots, which has been erroneously attributed to *phylloxera*. Another *Tyroglyphus* frequently infests Mushrooms. So little is as yet known about these creatures, even amongst entomologists, that it is difficult to suggest remedial measures. We should consider the advisability of raising plants from a clean stock, and grow them in soil that has been subjected to a roasting process. The infested plants, also the soil in which they are established, we should consign to the fire, as according to your description of them they are unsightly and may be expected to get worse. You might experiment on one or two of them with a rather strong petroleum mixture, commencing with a wineglassful of the oil briskly stirred in a gallon of soft water; it may possibly, however, require a stronger dose to destroy the encased enemy than will be good for the plants, and we suspect the stamping out process will have to be resorted to sooner or later.

Applying Liquid Manure to Vine Borders (Inquirer).—1, Provided the borders are well drained you may safely and advantageously water them with the liquid from the farmyard, as the superfluous moisture will be carried off, the water being displaced by the liquid to a great extent through its being more fluid, the manurial matter being absorbed and retained. There is reason, however, even in applying liquid manure, as to afford it too abundantly may cause the soil to become sodden or sour, and then it had better never have been applied. One or two good soakings before starting the Vines is in most instances all that is desirable. After growth is made give a good supply, also after the Grapes are set, and when they are commencing to colour or have stoned. 2, We have tried cutting off the aerial roots on Vine rods and allowing them to remain, and found no material advantage either way. Aerial roots are evidence of too close and moist atmosphere with a slow or defective root action. They are very common with Vines that have their roots in cold and unprotected outside borders, and never (at least in our experience) appear on Vines that have the roots in a satisfactory condition, through the soil and border being in good condition, and have a temperature corresponding to that of the atmosphere, so as to induce reciprocity of action between the feeders and elaborating organs—i.e., the leaves. 3, Some use surface dressings of fresh cow dung, 2 or 3 inches depth, and with very satisfactory results, but we have not heard of the practice you describe before, and certainly should not consider it a desirable one; but, on the contrary, likely to do more harm than good.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Miss Carver*).—1, Waltham Abbey Seedling; 2, Round Winter Nonesuch; 3, Winter Colman; 4, Waltham Abbey Seedling; 5, Royal Russet. (*W. B. Milford*).—Dredge's Fame. (*G. Fulford*).—1, Vicar of Winkfield; 2, Waltham Abbey Seedling; 3, Golden Winter Pearmain; 4, Adams' Pearmain; 5, Not known, inferior; 6, Forge. (*H. P.*).—1, Golden Reinette; 2, Winter Greening; 3, Sturmer Pippin. Pears entirely rotten. (*W. B.*).—2, Royal Russet; 4, Rymmer; 6, Winter Pearmain, also known as Duck's Bill. The paper box was smashed in the transit, and the numbers on the other fruits were displaced.

COVENT GARDEN MARKET.—DECEMBER 18TH.

For Christmas decorations cut Evergreens plentiful; Mistletoe, well-berried, plentiful. Holly very scarce of berries.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ..	2	0 to 6	Oranges, per 100 ..	4	0 to 9
Nova Scotia and ..	0	0	Peaches, dozen ..	0	0
Canada, per barrel	12	0	Plums, $\frac{1}{2}$ sieve ..	0	0
Cherries, $\frac{1}{2}$ sieve ..	0	0	Red Currants, per $\frac{1}{2}$ sieve	0	0
Grapes, per lb.	1	0	Black ..	0	0
Lemons, case ..	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen ..	4	0 to 5	Leeks, bunch ..	0	2 to 0
Asparagus, bundle ..	0	0	Lettuce, dozen ..	0	9
Beans, Kidney, per lb. ..	0	6	Mushrooms, punnet ..	1	6
Beet, Red, dozen ..	1	0	Mustard & Cress, punnet	0	2
Broccoli, bundle ..	0	0	Onions, busbel ..	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	6	Parsley, dozen bunches	2	0
Cabbage, dozen ..	1	6	Parsnips, dozen ..	1	0
Capsicums, per 100 ..	0	0	Potatoes, per cwt.	3	0
Carrots, bunch ..	0	4	Rhubarb, bundle ..	0	2
Caniflowers, dozen ..	2	0	Salsify, bundle ..	1	0
Celery, bundle ..	1	0	Soozonera, bundle ..	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	3
Cucumbers, each ..	0	3	Spinach, bushel ..	1	0
Endive, dozen ..	1	0	Tomatoes, per lb.	0	6
Herbs, bunch ..	0	2	Turnips, bunch ..	0	4

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	4	0 to 9	Maidenhair Fern, doz.	4	0 to 9
Asters, per bunch, French	0	0	bunches ..	2	0
Azalea, dozen sprays ..	0	9	Mignonette, 12 bunches	1	6
Bouvardias, bunch ..	0	6	Fr., large bunch	1	6
Camellias, dozen blooms	1	6	Narcissus (Paper-white),	1	0
Carnations, 12 blooms ..	1	0	dozen sprays	1	0
Christmas Roses, 12 blms.	1	0	French, 12 bunches	4	0
Chrysanthemums, dozen	0	6	Polargoniums, 12 trusses	1	0
blooms ..	0	6	scarlet, 12 bunches	6	0
Chrysanthemums, dozen	0	6	Primula (double) 12 sprays	1	0
bunches ..	6	0	(single) 12 sprays	0	9
Epiphyllums, doz. blooms	0	6	Roses (Indoor), dozen ..	0	6
Eucharis, dozen ..	3	0	Red ..	0	0
Gardenias, 12 blooms ..	4	0	" 12 blooms ..	1	6
Gladiolus (various) dozen	0	0	Tea, white, dozen ..	1	0
sprays ..	0	0	Yellow ..	2	0
Hyacinths (Roman) dozen	0	6	Freoch, per bunch ..	2	0
sprays ..	0	6	Spirea, dozen bunches ..	9	0
Lapagoria, 12 blooms ..	2	0	Stephanotis, doz. sprays	4	0
Lilium, various, 12 blms	2	0	Sweet Peas, doz. bunches	0	0
Lilium longidorm, 12	3	0	Tuberose, 12 blooms ..	1	6
blooms ..	3	0	Violets, dozen bunches ..	1	0
Lily of the Valley, dozen	1	6	French, per bunch	2	0
sprays ..	1	6	Parma, per bunch	3	0
Marguerites, 12 bunches	2	0	White Lilac, Fr., per bunch	6	0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Ficus elastica, each ..	1	6 to 7
Arum Lilies, per dozen ..	12	0	Foliage plants, var., each	2	0
Arborvitae (golden) dozen	6	0	Geraniums, Ivy, doz. ..	9	0
Azalea, various, p. r doz.	30	0	Hyacinths (Roman) 12 pots	0	0
Begonias, various, per doz.	4	0	various ..	0	0
Balsams, per dozen ..	0	0	Lobellias, per dozen ..	0	0
Caladiums, per doz.	0	0	Marguerite Daisy, dozen	6	0
Christmas Rose ..	0	0	Mignonette, per dozen ..	0	0
Chrysanthemums, dozen	6	0	Musk, per dozen ..	0	0
Dracena terminalis, doz.	24	0	Myrtles, dozen ..	6	0
Dracaena viridis, doz.	13	0	Palms, in var., each ..	2	6
Epiphyllum, per doz.	12	0	Polargoniums, scarlet, 12	0	0
Erica, various, dozen ..	12	0	Primula (single) per doz.	4	0
Enonymus, var., dozen ..	6	0	Rhodanthus, per dozen ..	0	0
Evegreens, in var., dozen	6	0	Saxifraga pyramidalis,	0	0
Ferns, in variety, dozen	4	0	per dozen ..	0	0
			Solanums, per dozen ..	6	0



SWINE.

SIMPLE as the correct management of swine is, blunders constantly occur from carelessness more than anything else. Some pigs are required; they are purchased or bred without any particular attention being given to the special purpose for which they are required, yet selection and careful breeding answer as well in this as in anything else. Why is it that such high prices are paid for special strains of certain breeds? Simply because of care in the breeding and selection of animals decidedly superior to others both for special and general purposes.

To be more particular, and, therefore, more useful, let us take the class of pigs required for use at the home farm. We want a compact animal of chubby tendency that will fatten quickly and is ready for use all through the "porker" stage of its existence, or which may be kept on profitably for home use a few weeks after it has passed that stage. Any surplus of such pigs always commands a ready market in all towns, and they are sold as "Londoners" at long distances from the metropolis, where they are in constant request at the Central Meat Market. Farmers are loud in complaints of high railway rates, yet we are bound to admit that we have for several years had porkers regularly killed, dressed, and sent by rail to London from a farm upwards of eighty miles at a profit; not always to our entire satisfaction, for markets fluctuate, and one has to take an average price in making calculations or striking a balance.

A useful class at agricultural shows is that of sows with pigs, as showing the best pigs for our purpose; classes for porkers are also useful, very much more so than that for huge fat hogs. At the recent Smithfield Club Show middle white and black Suffolks were seen to advantage, but nobody could judge of the real value of Tamworths from the specimens shown there. If it be true that porkers of this breed are of especial value because they become

quickly ready for market without the development of an undue proportion of fat, then we hold that in the Agricultural Hall, Islington, of all places, this useful trait should be brought clearly before the public. We saw Tamworths in large numbers with other breeds at several farms in the midlands a short time ago, and had reason to like their appearance. They appear to form a useful mean between the chubby small white and the huge large framed nondescripts to be met with everywhere. We are just now about to stock a small home farm with pigs, and are trying to obtain sows from a friend who has an excellent cross breed between the Suffolk and Berkshire, and a young boar of a good middle white breed. We have had some of these sows at two off-hand farms specially for breeding Londoners, and they have answered admirably, but we approve of an occasional change as tending to promote health and vigour.

Sows certainly repay well for careful selection and sensible treatment. The state of semi-starvation which they are frequently kept after the pigs are weaned is clearly a mistake; a fair healthy condition is always best if we would have good litters of pigs. A breeding sow should always be young and active, and never of very large size. When they become at all heavy and unwieldy they are at once fattened and sold. Large-framed old sows may be made worth £10 or £12, but the meat is coarse grained, and though the huge hams have a noble appearance they are to be avoided. Experience has shown that in profitable pig keeping sows past being useful for breeding are, when fattened, not worth more than about £5 at market. The dealer makes a profit on that price, which it would hardly answer the home farmer's purpose to strive for. The animals have served their turn, and the sooner they can be disposed of at a profit upon the fattening the better for him.

Mention was made last week of the passage inside of and at the back of the breeding sties. We regard this as an important adjunct to the buildings, as we altogether disapprove of any disturbance of the sow in farrowing. It may be necessary to remove teeth from the mouths of the pigs if they lacerate the teats and render the sow savage. Apart from this, there can be no real occasion to touch the pigs for the first month. As soon as the pigs are able to feed they have pollard mixed with milk in a long low trough placed outside the pound, to which they have access through holes closed with slip boards. This is done upon the principle of the speedy development and prompt use or sale, which applies to all animals of the farm. Milk is mentioned for porkers' food, as it is taken for granted that dairy and pig farming are carried on conjointly at every home farm. Meal or pollard mixed with water is nutritious food, but milk and meal is very much more so. The sort of meal used is not so important as that it is pure and wholesome, a mixture being preferable, all inferior grain being so turned to account. It is worthy the attention of home farmers if it is not altogether best to have power and grinding apparatus at the farm rather than have to pay a miller 1s. a sack for the grinding.

WORK ON THE HOME FARM.

Ploughing arrears on heavy land should now be left till spring on every farm where it has been found that the soil suffers from being turned over when wet. This should act as an incentive to early autumn culture before all things, and it was this which caused us to get so forward with our heavy land ploughing as to be able to begin Wheat sowing early in September. The bailiff of that farm had reason to feel proud of his Wheat plant after the wet October when hardly any of the neighbouring farmers had sown any of their winter corn. Not always have we been so successful at seed time, for our Winter Beans were a failure there last autumn. This year they were sown early and sown well, and there is a full plant.

Plenty of Wheat has now been threshed to afford ample supplies of straw for thatching. With several hundreds of old thatched buildings, we have avoided using thatch for any new ones. The general rule that the tenant supplies straw and the landlord labour for repairing old thatch on farm buildings seems fair enough; but it often proves a heavy tax upon tenants of small farms, and we prefer to use some more durable material for new buildings, preferably corrugated tiles as being substantial, cheap, and neat in appearance. Not unfrequently when farms change hands, the entire cost of thatching falls upon the landlord, and it should be the agent's particular care to see that the

work done is thorough and not mere patchwork. When the thatch of a barn has become thin, the only safe course is to cover the whole of it in a substantial manner, and to have an extra thickness upon the ridge. The matter is then out of hand, and the cost is not at all doubtful, as the work is done by the square of 100 feet at a fixed price.

Of almost equal importance to yard drains are troughs for the eaves of the buildings to carry the water to large down pipes into drains away from the yard. Where this is neglected the litter becomes saturated, and frequently enough water falls to wash all manurial constituents out of it. The best remedy for this is covered yards, but needy landlords can hardly afford such luxuries for tenants' cattle now, and it is better to ask for what is possible. For thatch, a cheap and useful gutter is easily contrived with a couple of boards nailed together at right angles, with a cross brace or two and some angle irons, with a little pitch run along the bottom to prevent drip.

MILK FEVER IN COWS.

BELIEVING as I do that any information would be acceptable which will enable cowkeepers to cope more successfully with that dreaded disease in cattle, milk fever, I desire, with your permission, to place before the readers of this Journal a most excellent remedy, discovered by Professor D. McIntosh, who has given much attention to the subject, and used very successfully by Mr. F. A. Cooper of Westbury Court Farm, Bristol.

Prescription.—As soon as possible after it is known that the animal is attacked give (for a large cow) 1½ lb. of Epsom salts, with 1 oz. of powdered ginger in half a gallon of cold water. Mix 1½ lb. of Mustard in warm water, and rub over loins and along the spine, also a little behind the poll. Cover up with sacks and keep warm. Aromatic ammonia, 10 ozs.; spirits of nitrous ether, 20 ozs., mixed. Dose.—3 ozs. in half a pint of cold water every half hour for five doses, then once every hour till the rest is administered. Keep the cow's head up with bundles of straw. No gruel, &c., to be given till she gets up. The quantity of ammonia and ether stated above was, I suppose, considered by the Professor to be sufficient, and probably is so in some cases. The following instance, related to me by Mr. Cooper, will, I think, show that it is not in all. The last dose was given about midnight. Before the morning a relapse had taken place, and by six o'clock the cow was insensible, and of course unable to swallow. He obtained a fresh supply as soon as possible, and frequently moistened her mouth with a little, and also caused her to inhale the fumes. She soon revived, after which the usual doses were administered, amounting to about half the prescribed quantity. About 10 A.M. he had the satisfaction of seeing her rise, and eventually recover.

Another case which goes to prove the same thing was that of a short-horn under my charge. About two hours after the last of the medicine had been given her she evidently showed indication of a relapse. Acting on the experience gained in the last case, Mr. Cooper advised the medicine to be continued in full or half doses according to the state of the patient. The advice proved to be sound, for in a few hours she was standing up, and the next day appeared but little the worse. The milk should not be allowed to accumulate in the udder.—THOMAS SMITH, *Henbury Hill*.

AGRICULTURISTS' POCKET BOOK.—Messrs. Ballière, Tindall & Co. send us a specimen of their Agriculturists' Pocket Book and Diary, which has been compiled for the use of farmers, land agents, and agricultural students. It is a handy and useful companion for all who are connected with the management of land and stock. It has been prepared by Mr. G. E. Bennett, F.R.C.V.S., and is said to be the first work of the kind published in this country, and is based on the German model. It contains valuable tables on the cost of different kinds of work, information on chemical manures, seeds, stock, insects, fungi, and various other matters, with an almanac and diary.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1889.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
December.										
Sunday	30.314	32.3	32.3	W.	36.0	46.2	31.1	47.9	29.2	0.158
Monday	29.905	45.9	45.9	W.	36.3	49.8	32.3	54.6	30.1	—
Tuesday	29.439	45.9	41.1	W.	39.1	48.2	45.2	52.3	40.4	—
Wednesday ..	29.438	32.6	32.4	W.	39.0	39.4	29.4	54.3	25.8	—
Thursday	30.069	27.6	27.6	W.	37.8	41.8	26.2	49.8	20.6	0.019
Friday	29.827	44.2	43.6	S.	36.9	47.0	36.5	49.9	22.8	0.058
Saturday	31.192	34.2	34.2	N.	37.2	39.5	33.0	48.1	27.6	—
	29.893	37.5	37.1		37.5	45.0	33.4	50.3	28.1	0.235

REMARKS.

8th.—Fine and clear, with sunshine during the morning.
9th.—R. in from 1 A.M. to 8.30 A.M., fine day, slight drizzle about 5.30 P.M.; much warmer.
10th.—Mild fair morning, fine afternoon, bright night.
11th.—Fine and bright.
12th.—Fine and sunshiny.
13th.—Dull and drizzly morning, sunshine in afternoon, slight fog in evening.
14th.—Dull and raw.
A damp dull week on the whole, and considerably warmer than the previous one.—
G. J. SIMONS.



CERTAIN seasons of the year are periods of special activity in Covent Garden Market, the great central depôt of vegetable produce in the market, but at no time are the supplies so extensive and the business so great as in the week preceding Christmas. A market morning then presents an astounding spectacle, and familiar as the visitor may be with the enormous population of London, he might think they were preparing for a siege instead of a day's consumption. Yet this is really only a portion of the supplies, for at several other large markets—notably the Borough, near London Bridge—a similar plethora prevails, the S.E., S., and S.W. districts depending to a considerable extent upon this depôt. Covent Garden is, however, thoroughly representative both in the variety of its supplies and in their quality. Its history is closely connected with the development of commercial horticulture, and its records would convey a better idea of the progress made within the present century than those of any existing institution. Probably at no other market in the world can such a wonderful diversity of vegetable products be seen. It is a vast museum of special interest to horticulturists of all kinds, and scarcely less so to the general observer and student. With the growth of the population and the increased demand for fruit, flowers, and vegetables the market has extended its accommodation and resources—not perhaps always so quickly as desirable, but the improvement has come at last if tardily, and it is now in a more efficient condition than at any past period.

An indication is afforded of the change that has taken place in this market by a comparison of the two illustrations on pages 554 and 555. One of these was prepared from a painting by Joseph Vanaken, in the possession of the Marquis of Bute, and depicts the condition of the market in 1745, long before it was covered in, a series of sheds and stalls such as are still seen in provincial towns occupying the space on market days. On other days it is said the market was the scene of many football contests and other sports. The second illustration (fig. 72) represents a portion of what our artist saw in the respective departments a few days before Christmas, 1889, and it is to this we wish now to direct more particular attention, giving a brief review of the leading features and the supplies. To deal with them exhaustively would far exceed our purpose and the space at command.

Commencing with the flower market, which forms the central subject of the illustration, it must be premised that December is not the best month for seeing this department, as notwithstanding the demand it is impossible to secure the variety and abundance of floral attractions that are readily secured in the spring months; still we find every one of the hundreds of stands filled with choice productions, either plants or cut flowers, that cannot fail to excite a feeling of surprise at this time of year. Around London many acres of glass houses are solely devoted to the culture of plants for this market, and it may be easily imagined that special efforts are made to render the Christmas supplies as satisfactory as possible. The bare enumeration of the plants in pots would fill much space, but we can only note a few of the principal features, and amongst them Heaths will rank nearly foremost. Superbly vigorous little specimens, such apparently as only market growers know how to grow, are seen in thousands, *Erica hyemalis* and *E. gracilis autumnalis* almost exclusively, as even as if turned out of a mould,

and all in small pots. Groups, banks, and stages of these plants prove how popular they are, and what a demand exists for them. Fine bushy specimens of white Marguerites (*Chrysanthemum frutescens*) have been noticeable on several stands recently, in striking contrast to these being the brilliant heads of Poinsettias, furnishing the richest colour at the present season. Cartloads and vanloads of Chinese Primulas and Cyclamens have been brought into the market, and speedily transferred to the retailers or decorators who employ such plants in large numbers, and are compelled to resort frequently to Covent Garden to maintain their supply. A few *Richardia* plants are seen, but the spathes are mostly sold separately, and the same may be said of the Poinsettias, which therefore come more strictly under cut flowers. Bulbs and similar forced plants are contributed largely, Hyacinths being perhaps the least satisfactory at this early date, though they are appreciated by many for their fragrance. In effectiveness the early Tulips are far the best, and we have them in three colours—scarlet, yellow, and white, the two first being very popular and cheap. The majority of these are sent up in shallow boxes, in which the bulbs have been closely packed, so that from eighteen to twenty-four are contained in a small space. These are often transferred by the retail florists into pots with Ferns and Lilies of the Valley, and very bright little specimens they make, half a dozen or more in a pot, either of single colours or mixed. A few pots of Mignonette find a place in the stalls, but the Christmas stock of this plant is restricted. The red-berried *Solanum capsicastrum* may perhaps be included here, as the brightly coloured fruits render it as attractive as many of the flowering plants. It is a great favourite, and in good demand now, when colour effects are so much needed.

The great bulk of the plant supplies for Christmas consists, however, of those grown mainly for their foliage, and of proved excellence for decorative purposes, both in regard to grace of habit or distinctness of leaf colouring, or for properties of endurance. Plants of this character are sent in by hundreds of thousands, Ferns, Palms, *Dracenas*, *Aspidistras*, *Ficus*, *Cyperus*, and small *Thuas*, with Laurels, Aucubas, and many other similar plants. In the left hand corner of the illustration one of the special foliage plant stalls is depicted, which on the occasion of our visit was very notable for the effective display of *Dracenas*. It is where a well-known horticulturist, Mr. Bause, now in the market trade, on his own account disposes of the plants he has done so much to improve and grows so well. Prominent amongst the varieties were *Elizabethæ*, *norwoodensis*, *pendula*, *terminalis*, *alba*, *igneæ*, and *Liudeni*. The upper part of the stall was occupied with Palms, *Kentias*, *Latanias*, and *Coccos*, while at the lower part were the much-enduring green and variegated *Aspidistras*. These are fairly representative of the general supplies of foliage plants, the Ferns already mentioned comprising *Pterises* in a large majority, with, however, a good number of the glaucous *Polypodium aureum*. The plant trade is an important one to home growers, as the foreign element does not interfere with it as it does with other departments.

Highly important too is the cut flower department, and the enormous quantities brought in and disposed of during the past few days are astounding. Elaborate series of figures and statistics are often given with regard to market supplies, but they are frequently extremely misleading, founded on imperfect estimates, or simply guesses. An early morning visit to the market itself, attendance at a few of the auction sales of imported produce, or a journey to one of the large market establishments around London, would give a far more reliable idea upon the matter than all the statistics published. For the Christmas market the principal cut flowers are the following, and it may be remarked that a formidable competition is afforded by the continental consignments which arrive in large numbers and are often preferred by purchasers. We recently saw an instance in the case of *Safrano Rose*, of which both foreign and home samples were submitted, but the former were preferred

because retail florists find they command a more ready sale and at a higher price, owing to their better colour and firmer texture. Other Roses are also fairly numerous. Chrysanthemums are still in much request and abundant supply, white incurved and Japanese predominating, but yellow and bronze Japanese are also in demand. Christmas Roses (*Hellebores*), Violets, *Bouvardias*, Lily of the Valley, *Pelargoniums*, *Azaleas*, *Eucharis*, *Gardenias*, *Tuberoses*, double *Primulas*, *Carnations*, Roman *Hyacinths*, and Paper White *Narciss*, *Mignonette*, *Orchids* (*Dendrobiums*, *Odontoglossums*, *Cypripediums*, *Lælias*, and *Zygopetalums* chiefly) are the principal flowers, and some of these are seen in very large quantities; but *Poinsettia* heads are much valued, and sell at as much as 1s. 6d. or 2s. each. They are used rather extensively for table decoration, and large orders are received for them. They require very careful packing, however, a piece of cotton wool being usually placed in the centre of the head, and the bracts tied upwards over this, and surrounded by a large piece of wool to prevent the bracts being damaged. A number of heads can then be packed closely together in small compass, and keep well. It is common to dip the ends of the stems in hot water to prevent the milky sap oozing out, but another method has been found a good one—namely, searing the ends of the stem with a hot iron.

In the florists' shops of the central avenue are found some of the most tasteful combinations of the flowers at command imaginable—bouquets, wreaths, buttonholes, sprays, baskets, crosses, in fact every form in which flowers are employed. Many an excellent lesson may there be learned in the art of floral decoration, as the most experienced hands are constantly engaged upon the work, and the taste of the great refined has to be studied. The left hand corner sketch shows a portion of one of the shops (Mr. Dickson's). White flowers are largely used for the various purposes at this season, and Christmas Roses are in great favour for wreaths and crosses. A soft grey lichen is a favourite just now as the base, and very beautiful the *Hellebore* or *Eucharis* flowers look upon this with a little foliage. Dark Roses are also in much demand for buttonholes, but never too abundant. Violets, however, make up for any deficiency, and *Bouvardias* furnish some useful colour for bouquets and sprays.

A small treatise could be written upon the Christmas fruit supplies, for this department is a scene of special activity. The spacious Floral Hall is now devoted almost exclusively to the auction sales of fruit, and there during the past week have been huge piles of barrels and boxes of all descriptions containing Pears from France; Apples from America; Pine Apples, Bananas, and Oranges from various regions. The Pears merely come in shallow boxes and are nearly all labelled "*Doyenné*" and "*Duchesse*," but the varieties are occasionally somewhat mixed. The American and Canadian Apple barrels are now familiar objects, and many thousands of these have changed hands within the past few days. Newtown Pippins are in most demand, but Baldwins are the most abundant, cheaper, and are liked by many for their colour. It is strange to note in passing through the other market how few good samples of English Apples are seen; these, however, fetch substantial prices. The Pine Apples arrive in boxes somewhat like Orange cases; they are cut with a good stem attached, the crown and this being secured to cross pieces, so that the fruit is kept steady in one position. Cheap Pine Apples are now one of the features of the market, for grand fruits can be purchased for 6s. or 7s., as good as English grown samples that only a few years ago realised 30s. each at Christmas time, and good fruits can be had as low as 3s. In Madeira and neighbouring islands Pine Apple culture has been greatly extended of late, and we are not now dependent upon West Indian supplies for imported fruits. Most of these in the Western Isles are grown under glass, and consequently are thoroughly ripened. The Bananas are sent in somewhat conical deep baskets of split bamboos, one bunch in each basket, and these too "go" at moderate prices; in fact, fruits are retailed in some of the shops at 6d. a dozen, which at one time, not so long since,

would have brought as many shillings. Oranges, of course, constitute an important Christmas supply. They are in many varieties, the Jaffa, the St. Michael's, the Mandarines and Tangerines predominating. The former come in large cases, the latter in small, neat, shallow boxes, each fruit wrapped in gold or silver paper, and having a very ornamental appearance. When half a dozen auctioneers, each attended by a hundred or more probable purchasers, the Floral Hall is a perfect Babel, shouts of sellers, buyers, and attendants, the rapid opening of barrels by herculean porters armed with axes, and the general commotion of arrival and removal constitute something that is quite indescribable.

Grapes, chiefly Gros Colman and Muscat of Alexandria, are included in the shops, average samples of the latter realising 7s. or 8s. per lb., the best being proportionally higher. Some consignments of Easter Beurré Pears from California look promising, but we have seen some unpacked in very bad condition. Pomeloes, Litchees, Custard Apples, and Mangoes are amongst the tropical fruits that occasionally find their way on to British tables, and all have been in the market during the past week. Nuts appear to be abundant, but they are scarcely equal to the demand, and prices rule high for good Walnuts and Cob Nuts. Barcelonas, Chestnuts, Almonds, and Brazils are abundant and good.

Concerning the vegetable supplies little need be said, as they are of the ordinary winter character, except perhaps that Brussels Sprouts are more in demand, and good samples have been the rule. It may have occurred to some who visit horticultural shows that considerable taste is frequently displayed in the arrangement of vegetables in competition, and very bright effects are produced in large classes. Vegetables have, however, recently been utilised for a very novel purpose—namely, the decoration of a dinner table, and the result was so satisfactory that it will probably soon find some imitators. During the recent visit of the Prince of Wales to Easton Lodge, Dunmow, Lady Brooke suggested an experiment of this kind, which was carried out by Mr. H. Lister to the entire satisfaction of all, including the Prince. Only small neat samples were employed, and as many bright colours introduced as possible, vegetables being exclusively employed. The idea is worthy of mention now when novelty is so eagerly sought in such matters.

What may be termed the miscellaneous special supplies consist mainly of Holly, which, by the way, is neither abundant nor good; evergreens of various kinds, and the indispensable Mistletoe. The last-named has given the auctioneers plenty of work lately, as the crates have arrived in piled-up vanloads, and have been disposed of in several thousands at each sale, the average from 7s. to 10s. each, the crates being 4 or 5 feet square, and closely packed with Mistletoe, the value depending upon the quantity of berries to some extent. Much of this comes from France, chiefly from Normandy and adjoining districts. "Christmas trees" (*Abies*) also arrive in immense numbers, and a sketch of one of the "forests" has been caught and shown at the lower part of the illustration. Most of these have been rather ruthlessly torn from the ground, are devoid of roots, and are not intended to survive the festivities of the season.

Altogether Covent Garden Market is a wonderful emporium, and an hour can be profitably spent at this season in inspecting its stores.

AMERICAN BLACKBERRIES.

HAVE you not made a jumble on the above subject? If "South Wales" remarks were meant strictly to apply to the American Brambles I fancy he is about the mark; but if he includes the Parsley-leaved Bramble then he is decidedly wrong in supposing no good crops are grown. There are many places where this variety is grown to perfection, where the fruit is gathered by the hundredweight, and it is certainly his own fault if he has failed to grow and fruit this variety well. But then it is, I believe, not an American but an English-raised variety, and so he may purposely have omitted it, though this is not likely, as it is always called American. Your hit at him on page 509 is very good, but of

course you know that no express trains run to John o' Groat's—not beyond Perth. I have often wished they did, as the travelling up there is abominably slow.—F. BOYES, *Beverley*.

[We are glad our correspondent has taken to writing again. His pleasant letter atones for our "jumble," and we shall not mind jumbling again if he will continue writing. We did not, however, jumble over the Blackberry if we did over the train. We studiously avoided the term "American" in our few lines of pleasantry on the page cited, and in order that there could be no mistake about the variety we meant both its scientific and popular name was given, and we fully expected "South Wales" would take advantage of the opportunity thus afforded him for a smart rejoinder. Judging from his reply on page 527 he either did not see the "point," or admits the Parsley-leaved variety as an American. If he places it in the condemned list we are bound to suggest that his verdict has been arrived at on insufficient evidence. The Perth terminus is quite sufficient for our purpose, for before reaching it by express train the traveller from the Land's End must of necessity pass Yorkshire, in which county the Parsley-leaved Bramble bears far heavier crops than we have ever seen Raspberries bear, and the individual fruits were as large as the largest Raspberries we suspect our correspondent has grown or seen, and he is not satisfied with small or inferior produce as his letter indicates. If he grew such crops of Blackberries as Mr. W. K. Woodcock, for instance, used to grow near Sheffield, his praise of them there is little doubt would be far greater than his condemnation of what he did not see, and could not be expected to see, if his long journey was by "express," and he has not denied the gentle assumption. Will Mr. Boyes oblige by stating his authority for his belief that *Rubus laciniatus* is an "English-raised variety?"]

ARMERIAS.

THE Thrifts or Sea Pinks, as they are frequently called, are pleasing ornaments of many parts of our British coasts, our Scottish mountains, and the Alpine regions of Europe. In summer our native species, *A. maritima*, adorns many acres in this neighbourhood, changing the dark colour of the merse land into a light pink, an effect produced by the myriads of flowers of the "Merse Daisies," as they are locally called, which spangle its surface so closely that at a distance the green of the grass is unseen. Two varieties of this species, *A. maritima alba* and *A. maritima rubra*, are frequently used as rock or edging plants, and are very useful for these purposes. These Armerias vary much in shade of colour, and I have frequently come across plants of the white variety in a wild state, but have never met with the deep red, although plants approaching it in shade may be met with. The object of these notes is not, however, to extol the beauties of our native plants, but to draw attention to two other species which far eclipse it in stateliness and in value for garden decoration. Our native Thrift is a humble plant, rearing its head only a few inches above its tuft of grass-like leaves as if conscious that our northern breezes have little respect for tender beauty, but our immigrants from a more southern clime rear their heads far above their leaves as if courting the warmer breath of the southern zephyr.

Armeria plantaginea is one of the best and most useful of the genus, forming fine tufts of broad grassy leaves, from which rise in summer tall stiff stems about 14 or 18 inches high with good sized flowers varying in colour from white to deep red. These flowers are useful for cutting, and are rendered of additional value by the fact that they may be dried and used as everlasting. *A. plantaginea* is a native of the Channel Islands, and is of easy cultivation in a light soil not too wet in winter. The other species, *A. cephalotes*, the large-headed Portuguese Thrift, has several synonyms. It has also been called *A. latifolia*, *A. mauritanica*, *A. pseudo-Armeria*, *Statice lusitanica*, *Statice pseudo-Armeria*, and also *A. formosa*. I have, however, an idea that there is another species under the latter name which is distinct from *A. cephalotes*. Its English name is also doubtful, as in addition to that given above it is also called the Great Thrift, and in the "*Hortus Cantabrigiensis*" it is named the Plantain-leaved Thrift, by no means an inappropriate name.

Although this species seems somewhat fastidious as to soil, and of a more delicate constitution than *A. plantaginea*, it is one which should by all means be secured and given a trial on rockwork or in the border where a warm situation comparatively dry in winter can be secured. *A. cephalotes* has much broader leaves, larger heads, and finer individual flowers than the other species. It is also taller in growth, reaching with me 20 to 24 inches in height. The colours are white to deep red. These Armerias may be increased by division when large enough, but the simplest mode of raising a stock is by means of seed, which is best sown in pots or boxes and the young plants pricked out when large enough. The

seedlings will vary in colour, and the produce of a packet of seed is generally small.

There are several other species, such as *A. alpina*, *A. Lauchiana*, *A. bracteata*, but the two described are the finest and most distinct and deserve to be better known.—S. ARNOTT.

PRUNING PEACH TREES.

THE season having now arrived when the pruning of Peach trees will be pushed on with all possible speed, whenever occasions present themselves, until the whole both indoors and out have been manipulated, a few remarks on this interesting and important operation will, I hope, prove useful. I do not pretend to write anything original on the subject, as old lessons must be repeated again and again for the benefit of each successive grade of the rising generation of gardeners. Fortunately it is no longer thought necessary to plant young Peach trees and wait two or three years before half the allotted space could be filled with fruit-bearing shoots. It frequently happens now that as much space is covered and as much fruit produced in two years as was formerly the case in double that time. When houses have to be refilled it is by far the most economical plan to purchase trees of good size to start with rather than to study economy in the first instance by planting small trees, which are a long time in filling the space at their disposal.

It often happens that well established young trees can be removed from outside walls. This is decidedly better than obtaining large trees from a distance, and smaller ones can be purchased to fill up the vacancies. Assuming that we are dealing with a newly planted house of young trees, the wood of which has during the first season extended to one-third or one-half the space they are intended to cover, if the wood is fairly even, well ripened, and the outline of the tree shapely and well-balanced, I would not in any case shorten the points of the shoots where there is plenty of room for extension, as by so doing we curtail the fruit-producing area of tree. The shoots should be simply thinned, so as to leave the bearing wood about 6 inches apart over the greater part of the tree, necessarily allowing them a little closer towards the base, so as to keep plenty of wood for filling up vacancies. Whenever branches are removed take especial care to reserve the young ones that spring from their base, so as to prevent unsightly gaps; and where there is not room for extending prune them back to one or two eyes, so as to form spurs from which others may be extended whenever they are required. In some cases it is desirable to leave shoots that have only a few inches of room for extension, for the sake of producing an even crop of fruit. As soon as the fruit is gathered remove such, as it will intuse new life into those springing from the base, enabling them to fill up the vacant space, and ripen their wood thoroughly.

In cases where the leaders have extended far behind the other portions of the tree they should be shortened back, so as to produce a well-balanced head. I am a firm believer in keeping the wood of Peach trees as evenly balanced as possible. Once let any portion of a tree which has a tendency to become strong at the expense of the other parts go unchecked, and it is often a difficult matter to restore the tree to its proper balance. A great aid towards securing this desirable end is to bend the strong shoots downward, giving them a rather sharp curve at the base, and keep them in such positions till the young growths are a couple of inches in length. By this means the flow of sap is diverted from the strong to the weaker ones to a certain extent. When very gross shoots are produced they should be entirely removed, except in positions where they are particularly wanted to produce a well-shaped tree. In such cases cut them to within an inch of their base, and when disbudding is performed select the weakest shoot. Whenever shoots are cut back take care to shorten them to either triple buds or a wood bud. In the former case it almost invariably happens that the central bud is a wood bud, and in every instance wood buds are easily distinguished from flower buds by their thin and elongated appearance.—H. DUNKIN.

WINTER FLOWERING HEATHS.

It not uncommonly occurs that plants of these bought in from nurseries are quickly damaged through insufficiency of water at the roots. If the plants are in a healthy condition when received they will be found to be more or less root-bound, and with numberless young rootlets in great activity. If the plants are allowed to be dried at root every one of these rootlets will perish, and the plants will suffer in consequence. On the other hand, the roots will continue increasing with great rapidity if the soil is kept in a

fairly moist condition, and the period that the flowers will continue in good condition be extended very much.

The worst places to keep these plants are hot dry rooms, but even there they may be had in fair health by free applications of water. These remarks apply more particularly to *Erica hyemalis*, *E. caffra*, *E. gracilis*, and *E. melanthera*, but young plants of *E. Cavendishiana* and the *E. ventricosa*, varieties which flower in spring, must on no account be allowed to be dried. The best position during winter is on a cool base, where the plants will require a minimum of water applied to keep the soil reasonably moist.

The plants may be grown on for a second year in the same pots if care is taken to place them in a position where they are shaded from direct sunshine during the greater part of the day; but such plants are of course not to be compared with those bought in. However, by transferring into larger pots fine plants may be produced. Free drainage, good peat and sand firmly rammed in, and attention to watering, are the chief items to bear in mind. After repotting the plants must be kept close for the first ten days, and until May they will be better where the protection of glass can be given them, but thereafter the growths will be sturdier and more healthy if made in the open air.—B.

LANCASHIRE PRIZE GOOSEBERRIES.

VERY few persons outside the exhibiting districts know anything about the large prize Gooseberries seen at the various Gooseberry shows in the midlands and the north, and the very great interest taken in their cultivation by working men chiefly. I have before me a copy of the "Gooseberry Growers' Register" for 1889, which records the exhibits and prizewinners at seventy-three Gooseberry shows held in Lancashire, Yorkshire, Staffordshire, and other northern counties during the year 1889: also tabulated columns showing the number of prizes won by each variety at all the Gooseberry shows for the year. For instance, forty-eight varieties of reds were exhibited, a variety named Bobby taking 127 prizes of various degrees, and the heaviest berry of the lot weighing twenty-nine dwts. London follows next with eighty-nine prizes, Lord Derby eighty-eight, Clayton seventy-seven, Dan's Mistake sixty-nine. Yellows: Leveller 155, Ringer 102, Lady Houghton eighty-one, Mount Pleasant, sixty-nine. Fifty-five varieties of yellow were shown at the various shows. In greens forty-five varieties were shown, and Surprise scored 105 prizes, Stockwell ninety, Shiner eighty, and British Oak seventy. In whites forty-five varieties were staged, and Careless scored eighty-eight, Transparent eighty, Hero of the Nile seventy-six, and Antagonist fifty-five. A record is also given of the heaviest berry of the year since 1809, each year recording the name of the sort and its weight, and the heaviest Gooseberry in all these years is London, exhibited in 1852, weighing over 37 dwts., but many others run it close in weight. For a long number of years the heaviest weighing Gooseberry of the year has ranged from 27 to 36 dwts.

Is the Gooseberry sufficiently valued as a dessert fruit? may be very safely asked. Many of these prize varieties are thin-skinned, luscious, and deliciously flavoured when well ripened, and because the Gooseberry is regarded as a common fruit, and so little attention is devoted to it, and so little knowledge exists amongst gardeners as to the merits of many of the prize varieties as a dessert fruit, that the poor Gooseberry is a neglected scion of our family of fruits beyond its uses for culinary purposes. An impression exists that they are poor croppers, but this is not the fact; but to obtain very large fruits for exhibition work thinning out is resorted to, and the plants get plenty of care. Well planted at first, with top-dressings and manure water in the fruit growing stage, but woe betide the exhibitor who does too much when the fruit is ripening.

Of the varieties generally grown in our gardens old Crown Bob holds a place, and has done so for nearly a century. The Warrington or Ashton is everybody's Gooseberry, so also is Whitesmith. Golden Drop or Early Sulphur, Green Gage, Rambullion, Whinham's Industry are all first-rate, but none of these grow to the size of the Lancashire prize varieties. For delicious flavour give me still the old Red Champagne, small; but what a *bonne bouche* when quite ripe.

The caterpillar of the Gooseberry and Currant moth is a troublesome customer, but a little care at the proper time will do much to prevent its ravages. Either a top-dressing of gas lime or the removal of the top soil and burning it is one step, and the dressing of the trees before Christmas is another, using a mixture of soft soap and paraffin oil. Then a steady look out very early in the growing season for the caterpillar. These are all steps towards

the preservation of the Gooseberry tree from the ravages of the caterpillar.—RIBES.



SELECT HARDY CYPRIPEDIUMS.

AMONG hardy plants we have none possessing so many charms as the best hardy Cypripediums. Several species are even more beautiful than are many from tropical climes, and while the latter can only be grown in heated structures, and are therefore expensive to cultivate, the former may be grown by a far more numerous body of amateur horticulturists, provided they give due attention to a few simple though essential details. Anyone making a start with hardy Cypripediums should bear in mind that they cannot well be accommodated in the border usually devoted to hardy herbaceous plants; therefore it is prudent not to put them there, as the idea of obtaining satisfaction from them in this position will be vain. The position best suited for their requirements is almost sure to exist in any garden, and if not it is easily made. One of the primary considerations should be a partially shaded, low-lying, and naturally moist place. The question of suitable soil will next require attention, for the right material will scarcely be forthcoming in many gardens, and the natural soil will therefore have to be removed to a depth of 2 feet. Prior to proceeding with this part of the work a rough idea of the outline of the bed should be decided upon. This being done excavating the soil is simple enough. The soil being removed to the above depth, next cover the bottom with about 6 inches of brickbats, broken pots, or any similarly rough material that will form an efficient drainage, for although decidedly moisture-loving, stagnant water or anything approaching it must be carefully avoided, and by covering the potsherds with moss litter or rough sods of common peat an effective drainage will be insured.

The filling-in of suitable soil forms the next item. This should consist of rough fibrous or spongy peat and well decayed leaf soil in equal proportions, filling the hole to within 6 inches of the surface, which, with the sides of the bed sloping to this level, would have a foot thick of soil for the Cypripediums. Such a position as this might remain a veritable home for these charming plants for many years with an annual mulching of well decayed manure.

In planting them it is only necessary to cover with about an inch of soil, spreading the roots out carefully, and not burying them in a mass to quickly decay and permanently injure the plants. This is important, particularly to those who have but little experience with them. To commence with, I strongly recommend the following as not only perfectly hardy, but robust and vigorous also.

C. spectabile must, of course, be allotted the first place, since no other can equal this glorious plant when seen in established clumps in its full beauty. I have never forgotten the earliest plant I knew. Huge masses they were, producing six or eight stems, and each stem a pair of its lovely flowers. They were planted in a shady peat bed, which was favoured by a supply of water (at option) from a fountain in a higher part of the garden. During summer the bed was always in a state of semi-saturation, which suited them splendidly. The plant grows about 2 feet high when established, producing leafy stems, and terminating with its charming flowers. These vary considerably, the lip sometimes being of a bright rosy carmine, in others rose, while in many others the tinge of rose is delicate in the extreme, while the sepals and petals are white; but whatever shade one may chance to have, all will be found chaste and beautiful beyond compare. This handsome species is a native of North America, whence our leading hardy plant dealers invariably procure their supplies annually in December. I mention this fact for this reason, that if the plants are procured at once and planted as directed, the majority of the roots may be preserved, a highly desirable matter where success is coveted. It may interest not a few who have no convenience for making an artificial bog for these and similar plants, that this charming species may be grown in pans of peaty soil kept moist, either in a shady corner of a cold frame or in the greenhouse; in fact, many importations of less than twenty years ago, when its complete hardiness was not

fully realised, were either flowered in the greenhouse or protected in frames, and although they lend themselves admirably to this mode of treatment, and therefore placed within the reach of a greater number, it should be borne in mind that it is perfectly safe without any protection whatever.

C. Calceolus, a British species, now probably extinct, preferring loamy soil, for which provision can easily be made. In height it is usually a foot or 18 inches, and producing one or two flowers. In this the sepals and petals are brown, and the lip yellow. It is of easy culture when good tufts are obtainable, but too frequently many of the roots are torn off by the collectors in their native

and brownish yellow. Another yellow flowered species, with slightly fragrant flowers, is *C. parviflorum*. The individual flowers are smaller than usual, but by reason of its free growth and flowering should be included among the best kinds for this purpose. Some other exquisite species are still remaining, but as these require special treatment we will not risk them in the general collection, and will refer to these on a future day.—J. H. E.

A WALL OF TOMATOES.

IN the Journal of November 21st, page 436, I notice "J. H. W." writing on outdoor Tomatoes, and his remarks are good, especially as to



FIG. 70.—A WALL OF TOMATOES AT EWENNY PRIORY.

homes. Fortunately it is to be had cheaply, so that several may be grouped together to form a cluster.

C. acaule, a most distinct and handsome species, about 8 or 9 inches high, the flowers issuing from a pair of ovate, hairy leaves. Generally of a lovely rose colour, or delicate rose shaded with white. The flowers are also much longer than is usual, and the general aspect of the plant is different, particularly the pouch-like appearance of the lip. This species should be planted in a more sandy soil, and in the dryer portions of the bog.

C. pubescens is fortunately not only a very ornamental species, but one which is established quite readily. It resembles *C. Calceolus* in general appearance, but does not appear content with the soil which suits that species; while in the ordinary peaty bog it grows and increases freely. The flowers, however, have not the clear yellow so conspicuous in the lip of the British plant, but are larger

the time for sowing and planting, as I find our summers are too short to grow them outdoors unless getting good plants to start with. "J. H. W." did not mention the variety that has proved best with me and many others in this district, and I have therefore taken the liberty of mentioning it. It is Webb's Sensation. It is such a handsome fruit I did not venture to grow it outdoors extensively until this year, and to my surprise it is the best I have ever grown for size, quality, and productiveness. We grew several dozens of plants in different parts of the gardens where I could find a little vacant piece of wall. We also grew a great many in pots in the vineries against back walls, also in an orchard house trained to a cord or stakes; by doing so we have a continuous supply for many months. We placed fifteen plants out in front of our Melon and Cucumber house, the wall being 50 feet long and 2 feet 6 inches high, we did not allow the plants to grow any higher. Mr. Muir of Margam Park called to see me on September 6th, and was so surprised, he advised me to have them photographed, count the fruits, and weigh a dozen of them. We had gathered some from this wall before Mr. Muir's arrival, and there

remained 670. One dozen weighed 8 lbs. 10 ozs.—GEO. HAWKINS, *Euceny Priory Gardens.*

[The illustration has been prepared from a photograph of the wall in question furnished to Messrs. Webb & Sons.]

TREATMENT OF SOILS, MANURES, AND CROPS.

PEAS.

I HAVE had the pleasure of seeing Peas sown outside in December, and all the crop gathered and ground cleared in May. I would recommend this to all where the ground will allow the sowing in December, and there is no possibility of the seeds being killed. Sow Sangster's No. 1 and Chelsea Gem; I prefer the former where sticks and ground are plentiful, otherwise I would depend upon Chelsea Gem for this sowing. It has a good pod, fills well with good peas, is excellent in flavour, and it requires no sticks.

The ground should be well manured and dug. It is proper that Peas follow any variety of the Brassica family, and suppose that we take a plot left vacant by autumn Cabbages, or an early supply of Autumn Giant Cauliflower, drills should be drawn 3 inches deep to 6 inches wide, and for Sangster's 4 feet, and Chelsea Gem 2 feet 6 inches apart. Sow evenly, but not too thick, and cover lightly. These will begin to push through during February, and must have some soil drawn up to them to protect them from the frost. Use plenty of brushwood for the bottoms; I prefer Beech sticks, and clip the tops off level, so as to give a good appearance.

Should the soil not allow of sowing in December or January for the first crop, procure some good fibre turves about 1 foot long, 4 inches wide, and 3 inches deep. Lay them grass downwards and cut out a groove 2 inches wide and 1½ deep; sow the Peas in these, and stand them in a light greenhouse or frame. When the Peas are up and the turf full of roots, another turf the same size can be used or placed under them. Stand them out, or draw off the lights, to harden them, and when weather permits, and they are ready, dig a trench, plant them out, and protect from cold winds and frost for a time. I have done this in cold wet districts, and have been very successful. I like turves better than boxes, as the soil is often loose it breaks and spoils the roots. A sprinkling of soot and lime or dust coal should be put along those planted outside, and well mulch after sticking.

I think an excellent plan that may be adopted is to begin in January, and sow every month one, two, or three rows, to come in as a succession. The sowings can be carried on up till August. I do not care much for late Peas, but they must be had, and the best method to adopt is to dig a trench similar to that for Celery, and dig in a good supply of manure at the bottom, and during their growing period give copious supplies of liquid manure. The Peas I have found best for the early, second early, and late sowings. Early sowings, Sangster's No. 1, William I., and Veitch's Selected Extra Early. These are for the sowings before Christmas or January; or Chelsea Gem instead of all the above. A second sowing of the above can be made if the demand is great. For second or general crop I prefer Prodigy; it is a fine, green, wrinkled Marrowfat, an enormous cropper, and it seems to be more self-supporting than most Peas. It gave great satisfaction in the dining-room. I also like Telephone, Stratagem, and Gladiator, and they give great satisfaction as to flavour. For late sowings Sturdy must take the palm for flavour, bearing, and for lasting longer than any other Pea; but Autocrat, Maclean's Best of All, and British Queen can be relied upon to give general satisfaction. I have given the constituents of the Pea, which must act as a guide to the cultivator as to the nature of the manure required. They are identical to the Vetches and Tares, and therefore if the plot can be treated as advised for other crops it will be found a success—that is, dig and sow with Vetches or Tares, and turn them in or trench in the spring.

BROAD BEANS.

The Broad Bean is so hardy that it can be cultivated almost with indifference. Some say they will not do on cold wet land if sown early. I have seen them good from very early sowings in almost rocky soil to nearly pure sand. Like the Peas it should succeed Potatoes, Carrots, Parsnip, Brassicas, and the Turnip; but what is more important is it can be grown under difficulties. It is not a favourite, and I will give it little room here. Sow Mazagan in November. In February sow the main crop of Veitch's Improved Longpod, which is an exhibition variety; and successions of Early Longpod and Broad Improved Windsor in March and April if wanted.

KIDNEY BEANS.

I think the Kidney Bean is a favourite with all. I would sow on a good warm border at the end of April Canadian Wonder for the early supply, and a few rows can be had here and there where

small spaces are vacant. The sowings should take place about every fortnight till the end of June. The best sorts are Canadian Wonder, Ne Plus Ultra, Longpod, Negro, and Newington Wonder. Sow in rows 1½ to 2½ feet apart, and draw the soil up to the plants, thereby leaving a trench, which if filled with liquid manure the finer will the crop be.

SCARLET RUNNER BEANS.

Everyone who possesses a yard of garden is able to procure a supply of these Beans in most seasons, but a very hot summer offers an exception to this rule. The scarcity of Runner Beans can best be shown by stating that the price of a bushel was 10s. in 1887, a hot summer, while in 1889 they fetched just one-tenth of that sum. How was it that they were scarce? and how could the scarcity have been averted? I can speak for the success of ours, which was due to having a good trench prepared for them, and with fully 6 inches of manure dug in at the bottom, and to their receiving several waterings of liquid manure during their growing season. In 1889 I must say that ours were the finest I ever saw, and the secret of this was that they were grown upon the plot of land heavily dressed and trenched the year before for Brussels Sprouts. I claim no credit for this, as it was by accident they were placed there without any preparation.

They love to run in a cold manure during summer, and a trench best suits them. I would sow Veitch's Mammoth Scarlet the first week in May; sow the seed as close again as wanted, and thin out to proper distance when starting to run. Sow Painted Lady and Scarlet at the end of May for a succession. Keep the hoe going amongst them, and well water during hot dry weather.

While on a visit to Mr. Smythe of Basing Park Gardens, he showed me a fine sowing of a dwarf Runner Bean, in which he was taking a special interest, and judging by their power to stand almost as erect and self-supporting as the French Bean, and while bearing a heavy crop of pods too, every one being preserved for seed. If the progeny prove as good as the parents appeared to me, this will prove a great acquisition to those that dislike tall runners and others that require all the space that can be spared without being shaded, and also to plant Winter Greens between them.—G. A. BISHOP.

OUTDOOR PEACH CULTURE.

I WAS much pleased to read an article on the above subject on page 482 of your valuable paper, and, like Mr. Thos. Record, I hope some day to see more attention given to this system of growing Peaches. Our forefathers were able to produce excellent crops of fruit on trees outside, and surely our climate has not undergone such a change for the worse as to prevent gardeners of the present day obtaining like results. I have always maintained that if anything approaching the same attention and care were accorded to outside trees as to those under glass good crops would be the rule, and not an exception, as they are at present. I admit there are some gardens so badly situated as to render the cultivation of Peaches outside impossible, but in the majority there is nothing to prevent their being grown satisfactorily. If the trees are on a south wall I do not consider it necessary to devote more than 4 feet of the border to the trees, as by judicious lifting and root-pruning the trees are kept in a more healthy and fruitful state, and the roots are kept nearer the surface and in smaller compass, and are therefore more easily fed, and the remainder of the border can be utilised for early vegetable crops.

I have only had to record one failure—viz., this season—during the last ten years. The nine years previous we had splendid crops of excellent fruit, and I agree with Mr. Record that for colour, firmness of flesh, and briskness of flavour they could not be surpassed by the best examples of indoor fruit, and that on a border which has been cropped annually to within 4 feet of the wall with such crops as early Peas, Potatoes, and salads, besides raising all the Brassicas for planting, and at present the trees look promising for next season. We only protect them when in bloom, and then only with a strip of canvas 54 inches wide stretched from the top of the wall at an angle of 60°, and the damage from frost has been almost nil.

In regard to pruning I consider it best to cut out all wood not required immediately the tree is cleared of fruit, so as to give that required for next season the benefit of all the light and air. The disbudding, syringing, and feeding with liquid manure should be as carefully attended to as it is in the case of their more favoured brethren under glass.

Gardeners who are favoured with three or four good Peach houses can maintain a succession of fruit independent of outside walls, but the majority are not so happily situated, only having one or two small houses devoted to Peach culture. To such I would say, Do not believe those who say that Peach culture out-

doors is a failure until you have given the system a fair trial ; and when you have done that I have no hesitation in predicting you will agree with Mr. Record and myself that it is possible to produce as good crops of Peaches on outdoor walls at the present time as were ever produced before Peach houses became so plentiful.—LANCASTRIAN.



TO OUR READERS.—At this, the season of good wishes, we desire that all our readers will believe in the sincerity of our hopes that they will largely share in all that is embodied in the time-honoured sentiment—A MERRY CHRISTMAS.

— MR. RICHARD PARKER.—I beg, with your permission, to offer my hearty congratulations to Mr. Richard Parker, both on his success as an exhibitor, and also on his being strong enough and fair enough to admit the assistance of his foreman, Mr. Crooks. This is, to a persevering and industrious man, a great encouragement, and deserving men appreciate such recognition of their services.—R. KIRBY, *Oulton Hall, Leeds*.

— THE BIRMINGHAM GARDENERS' ASSOCIATION.—At the meeting on the 10th inst. Mr. John Pope, nurseryman, read a paper on "The Big Gooseberry," pointing out that many of the large Lancashire prize varieties were generally very little known outside of the prize Gooseberry growing districts ; and urging that many of these large varieties should be more cultivated and used as dessert fruits, as several of the prize varieties attained a large size and possess excellent flavour. Varieties of excellence in this respect were named, and the cultivation and enemies of the Gooseberry has in the shape of insects were referred to.

— CHRYSANTHEMUM SHOWS.—The Bradford Society will hold their annual Show on Friday and Saturday, November 7th and 8th ; the Croydon Society's Show is announced for November 12th, 1890.

— THE RAISIN CROP OF CALIFORNIA this year is reported to be a failure. Rain came during the dry season, and being wholly unprepared for it, the result is much greater damage than would otherwise be probable. Drying Grapes for raisins has in many places superseded the making of wine, which has been overdone in California.

— IT is said the LATE MR. JOHN BALL, F.R.S., has bequeathed his botanical library and herbarium to Sir Joseph Hooker, to the Director of the Royal Botanic Gardens at Kew for the time being, and to the President of the Royal Society for the time being, requesting them to give the same to such person or persons or public institution in this country, the British colonies or elsewhere in the world, as they or any two of them may select, with the sole object of promoting the knowledge of natural science. Right is, however, reserved for Kew to select previously such specimens or books as it may want.

— QUILLAIA SAPONARIA.—At a recent meeting of the Linnean Society Mr. Thomas Christy exhibited some bark of *Quillaia saponaria* from Chili, which has the property of producing a great lather, and is extensively used for washing silk and wool. It is now found to solidify hydrocarbon oils and benzoline, and thereby to ensure their safe transport on long voyages, a small infusion of citric acid rendering them again liquid. The plant named is a hardy evergreen shrub, a member of the Rose family. It is a native of Chili, and was introduced to this country in 1832.

— THE Economic Museum, Calcutta, has completed and despatched the first instalment of important Indian fibres required by the Indian Office for presentation to the Museums of the Royal Botanical Gardens at Kew and Edinburgh, and to the Chambers of Commerce at Dundee and Manchester.—(*Nature*.)

— AMERICAN APPLES.—The exports of Apples from all American ports for the week ending November 23rd, as reported by A. C. Lombard & Sons, were 48,211 barrels, including 8933 barrels from Boston, 12,277 barrels from New York, 27,001 barrels from Montreal. For the

season the total exports have been 371,608 barrels, including 81,081 barrels from Boston, 90,244 barrels from New York, 162,526 barrels from Montreal, 23,733 barrels from Halifax, 12,000 barrels from Annapolis. For the same time last year the total exports were 784,500 barrels, including 196,011 barrels from Boston, 242,319 barrels from New York, 291,692 barrels from Montreal, 54,484 barrels from Halifax. Boston's week's shipments were 8482 barrels to Liverpool, and 451 barrels to London.

— WE are informed that PROF. BORNMULLER, Director of the Botanic Garden at Belgrade, has started on a twelve-months botanical tour through Asia Minor. Beginning at Amasia, he will travel through the country between the courses of the Kisil-irmak and Euphrates southward to the completely unexplored mountains of Ak-dagh. The *Botanical Gazette* says that this country has only once been explored, thirty-five years ago, by the Russian botanist Wiedemann. According to the same authority, Prof. Bornmüller is a young and very successful explorer, with a great deal of experience, especially from his long journey in 1886, through Dalmatia, Monte Negro, Greece, Turkey, East Bulgaria, and Asia Minor. His original collection will be transferred to Weimar, where it will be carefully gone through by Prof. Hausknecht.

— BIRDS A FRIEND TO THE GARDENER.—One of the few sources of enjoyment in the garden, Christmas week, is a walk in front of my outdoor protected wall Chrysanthemums, to observe the late blooms expanding. You may be surprised to hear the open-air temperature here to-day is 50° Fahr., and the frost has not injured a petal under the canvas framework. To-day I was greatly amused watching four small birds, something larger than wrens, colour greyish green with white wing splashes, black head, darting nimbly from bloom to bloom turning over the petals, and evidently feeding on aphides. Would some ornithophile say what this useful lively little bird is? I have never noticed them in towns before, and they evidently find my Chrysanthemum screen a comfortable night retreat. Would it be the lesser spotted woodpecker (*Picus minor*)? It is, I believe, an insect feeder.—W. J. MURPHY, *Clonmel*.

— AN extremely bright Californian plant is figured in the "Botanical Magazine" for the present month (t. 7092). This is CLINTONIA ANDREWSIANA, which has its flowers in a dense terminal umbel, and the colour is described as "dark claret purple," though it is depicted of a bright rosy red. Mr. J. G. Baker says :—"Clintonia is a genus of baccate Liliaceæ, which contains six species four of which are North American and two East Asiatic. This is the only species in which the flowers are at all showy. In all the others they are greenish-white. Two of them were figured long ago in the 'Botanical Magazine' (tabs. 1155 and 1403), both under the name of *Smilacina borealis*. *C. Andrewsiana* is very local, being confined to the coast ranges of California, from Humboldt County to Santa Cruz. No specimen existed at Kew, either in the herbarium or the garden, till very lately. Our drawing was made from two plants that flowered last June, one in the herbaceous ground at Kew, and the other in the Botanic Garden at Edinburgh, from which it was kindly sent to the Royal Gardens by Professor Bayley Balfour. It requires to be grown in a shady position in a bog or peat bed."

— CARNATION MRS. REYNOLDS HOLE.—I can speak with confidence in favour of this Carnation for outdoor flowering. We have a good number of border varieties which succeed well in a cold heavy soil, and the one in question was the most admired of all last season. The colour is very pleasing, and quite distinct amongst Carnations and other flowers. For flowering out of doors the blooms do not split the calyx, a great point in its favour. It is a good grower, producing "grass" abundantly. New plantations are made annually early in October, and if a mulching of sifted vegetable refuse and wood ashes is applied between the rows the plants stand the winter well, but we always contrive to have them well rooted at planting time by layering early and using plenty of sandy soil, old potting refuse, to which is added some leaf soil. Into this the roots run more freely than they would into the ordinary garden soil, thus we are enabled to lift the rooted layers with a good ball of earth attached. The planting of a new bed in this manner gives scarcely any check to the plants, certainly much less than where late layering is practised, and ordinary soil used, especially if it be of a heavy character.—E. M.

— THE following botanical appointments are announced :—The Directorship of the Botanic Garden at Berlin, vacant by the death

of Dr. Eichler, having been conferred on Prof. Engler, of Breslau, Prof. Urban becomes Second Director of the Berlin Botanic Garden; and Prof. Prantl, of Aachen, succeeds Prof. Engler as Director of the Botanic Garden at Breslau. Prof. Sadebeck, of Hamburg, is appointed Director of the Botanic Garden in that town, in the place of the late Dr. Reichenbach. Dr. G. von Lagerheim vacates the Professorship at Lisbon, to which he was lately appointed, and goes to Ecuador as Professor of Botany and Director of the Botanic Garden at Quito. Dr. H. Molisch, of Vienna, takes the chair of the late Dr. Leitgeb in the Polytechnic at Gratz. Dr. F. Hueppe is appointed Professor of Bacteriology at the University of Prague, and is succeeded in the same chair at Wiesbaden by Dr. G. Frank, of Berlin. The venerable Professor von Naegeli retires from the Directorship of the Botanic Garden at Munich. Mr. F. S. Earle, Prof. E. S. Goff, and Prof. L. R. Taft have been appointed special agents in the Section of Vegetable Pathology in the United States Department of Agriculture. Mr. H. H. Rusby has been appointed Professor of Botany and Materia Medica in the New York College of Pharmacy.

— **OXALIS FLORIBUNDA AS A BASKET PLANT.**—The peculiar nature and graceful habit render the *Oxalis* especially adapted for this purpose. The brown insignificant little tubers tell no tale of the beauty hidden within, nor how, planted in small companies of four or five, they are ready in August or September to begin life over again, and from the slender drooping stems, with their leaves of Clover shape, to the clusters of blossoms, dainty and sweet, to charm everybody the whole winter long, and half the spring beside. They vary a little in habit, the yellow and rose varieties drooping more in flower and leaf than the white, which holds itself rather erect, yet is just as beautiful and as well adapted for hanging purposes, while their habit of bloom in all winter-blooming varieties is equally profuse. Pot as early as possible in good sandy loam, and three, four, or five in the same pot. After flowering the foliage will turn yellow, and should be allowed to dry gradually, when the bulbs can be shaken out and repotted at the proper time. While many plants in the window are often chary of bloom, to the great disappointment of their owners, the *Oxalis* has this merit, that it is never without flowers in season, and will reward by its abundance of bloom the attention bestowed upon it. It will entirely fill any basket, to the exclusion of all else, for it is a vigorous grower, and its leaf stems are equally profuse with its flowers.—H. K.

— **THE American Agricultural Department** has been making careful inquiry as to the **FOOD OF CROWS**; and the result, as set forth in a report by Mr. Walter B. Barrows, is likely to surprise those who have always contended that these birds do very much more good than harm. It is not disputed that they destroy injurious insects, that they are enemies of mice and other rodents, and that they are occasionally valuable as scavengers; but these services are slight in comparison with the mischief for which they are responsible. The injury done by them to Indian Corn, Wheat, Rye, Oats, and other cereals is enormous. According to one observer, the crow eats corn "from ten minutes after planting until the blades are 3 inches high;" and more than a score of other observers testify that he not only pulls up the young plants, but digs up the newly sown seed. His depredations extend to Potatoes, Sweet Potatoes, Beans, Pea Nuts, Cherries, Strawberries, Raspberries, and Blackberries; and he widely distributes certain poisonous plants, the seeds of which are improved rather than impaired by passage through his digestive organs. As if all this were not enough, it is shown that the crow eats beneficial insects, and that he makes himself a most formidable nuisance by destroying the eggs and young both of domesticated fowls and wild birds.

— **RETARDED GERMINATION.**—"E. A." writes as follows in *Nature*:—"I shall be much obliged to any of your readers who can give an explanation of the probable cause of the above phenomenon, which I have remarked this year. I sowed a number of patches of seeds of various hardy annuals in the garden in the last week of April; about half of them came up after the usual interval strongly and regularly. Such were *Calendula Pongei*, *Convolvulus minor*, *Lavatera trimestris*, *Collinsia bicolor*, *Iberis* (white and red), *Specularia speculum*, *Linum rubrum*, &c. Then there were some of which a few scattered seedlings made their appearance at this time, and after an interval of about six weeks the greater part of them also came up; among these were *Eutoca viscida*, *Nigella damascena*, *Sphenogyne*, and *Clarkia pulchella*. Thirdly, there were some of which I quite despaired. *Mignonette*, however, appeared thinly about the end of June, and at intervals till August;

and in the middle of June a few plants (in proportion to the seed sown a few) of *Linaria bipartata*, *Madia elegans*, and *Xeranthemum* came up, one consequence being that the last-named did not flower. Some of the seeds were obtained this spring from seedsmen, some were my own collection of the last year or two; of the latter were *Calendula*, *Lavatera*, *Convolvulus*, *Specularia*, *Eutoca*, *Nigella*, *Sphenogyne*, and *Mignonette*, so that cannot be said to give any clue. The conditions for germination and growth were favourable, and the season also. I have never remarked before any annuals so long in appearing above ground, though in some herbaceous plants I have noticed it—*e.g.*, *Gaillardia*, *Myosotis alpestris*, and *Anemone coronaria*."

— **SCHOOL ALLOTMENTS.**—At the little town of Sherborne, in Dorsetshire—which, by the way, possesses a public school, not nearly so well known as it should be—there has been for many years past a system of small allotments amongst the parochial school children. It was inaugurated so far back as the year 1857, when the Abbey National Schools were founded. Each allotment is stated to be about $3\frac{1}{2}$ perches, or lugs as they are called in the west country vernacular, this being the forty-sixth part of an acre, to a plot, for which a rent of 2s. is paid. Mr. Gordon, the Government school inspector, in reporting on the subject, says that the little garden patch has fitted boys to gain their own living to some extent, and he attributes to it the exceptional success of the allotment system generally in the neighbourhood of Sherborne. The gardens also furnish a healthy exercise for the boys, as well as a relief from school duties. More than that, they have been found to promote increased attendance at school, for, apart from the boys, the parents who derive a benefit from the produce take an interest in the system. Most people will agree with Mr. Gordon in wishing to see the example of the little Dorsetshire town followed more generally elsewhere, so far as the system is concerned, although there seems to be no good reason why so high a rent should be charged. Half the amount would be much more reasonable, and more likely to conduce to the successful introduction of the plan in other places. In fact, in the only other instance we have heard of, the allotments are given to the boys rent free. This is at the British Schools at Elby, in Gloucestershire, where ever since 1840 there have been about twenty school allotments of $2\frac{1}{2}$ perches each, distributed amongst the boys in the order of seniority or merit, which, a correspondent writes, are always eagerly sought after and highly appreciated, as well as exceedingly well cultivated, by those who are fortunate enough to obtain them.—(*Agricultural Economist*.)

— **THE usual monthly meeting of the ROYAL METEOROLOGICAL SOCIETY** was held on Wednesday evening, the 18th inst., at the Institution of Civil Engineers; Dr. W. Marcet, F.R.S., President, in the chair. Thirty-nine new Fellows were elected. The following papers were read:—1, "Report of the Wind Force Committee on the Factor of the Kew Pattern Robinson Anemometer." This has been drawn up by Mr. W. H. Dines, who has made a large number of experiments with various anemometers on the whirling machine at Hersham. Twelve of these were made with the friction of the Kew anemometer artificially increased, seven with a variable velocity, and fourteen with the plane of the cups inclined at an angle to the direction of motion. In discussing the results the following points are taken into consideration—viz., the possibility of the existence of induced eddies, the effect of the increased friction due to the centrifugal force and gyroscopic action, and the action of the natural wind. The conclusion that the instrument is greatly affected by the variability of the wind to which it is exposed seems to be irresistible; and, if so, the exact value of the factor must depend upon the nature of the wind as well as upon the mean velocity. There is evidence to show that during a gale the variations of velocity are sometimes of great extent and frequency, and there can be but little doubt that in such a case the factor is less than 2.15. The one point which does seem clear is that for anemometers of the Kew pattern, the value 3 is far too high, and consequently that the registered wind velocities are considerably in excess of the true amount. 2, "On Testing Anemometers," by Mr. W. H. Dines, B.A. The author describes the various methods employed in the testing of anemometers, points out the difficulties that have to be encountered, and explains how they can be overcome. 3, "On the Rainfall of the Riviera," by Mr. G. J. Symons, F.R.S. The author has collected all the available information respecting rainfall in this district, which is very scanty. He believes that the total annual fall along the Riviera, from Cannes to San Remo, is about 31 inches, and that any difference between the several towns has yet to be proved. 4, "Report on the Phenological Observations for 1889," by Mr. E. Mawley. This is a discussion of observations

on the flowering of plants, the appearance of insects, the song and nesting of birds, &c. Taken as a whole 1889 was an unusually gay and bountiful year.

ROOT-PRUNING.

In the first place even old trees of some kinds will bear root-pruning, but not all alike. We have within these last twenty years root-pruned Pear trees in so severe a manner as would have been totally destructive of the constitution of the Peach. The trees were growing against a wall having a north-eastern aspect, and were, to all appearance at least, thirty or forty years old. Indeed, their trunks at the base were at the time of the operation nearly a foot in diameter. These trees had been useful bearing trees some years previously, but had ceased to be productive, producing breastwood nearly a yard from the wall. A former gardener, lamenting their barrenness, had trenched a huge quantity of manure in at their roots, which was the only cure known to him for all vegetable diseases. The best of the joke, however, remains; the trees had huge old spurs all over them, extending 6 inches from the wall, most of them of a peculiarly remarkable character; these he at the same time shaved clean away. What, of course, might have been anticipated did indeed occur; the trees made what was termed capital new wood, and this, according to the most approved ancient recipe, was scientifically spurred back with the idea of generating fruit spurs. The obstinate trees, however, had been so much accustomed to run riot that they became actually more unmanageable, and instead of yielding their contributions to the proprietor's fruit room they continued year by year to augment the faggot pile. Still the worthy who managed them persisted in spurring back with an amount of patience which really deserved a better fate. In this state, then, we found the trees twenty-two years ago when next March arrives. We had then been what may be termed dabbling in root-pruning somewhat secretly, for in those times we could not afford to be laughed at. Ringing also had been practised, and in a year or so afterwards these huge Pears had a ring of bark removed of some 4 or 5 inches in diameter all round the bole. "Kill or cure" was the maxim. We will not go so far as to say that the trees made as much breastwood as ever, but truly they still rambl'd away disregarding our puny efforts. Neither, as far as we remember, were any amount of blossom buds produced worthy of notice; and, strange to say (old as the trees were, and possessing a huge excrescence of old bark nearly an inch in thickness), the wound made by ringing commenced healing with such rapidity that in a couple of years we could barely discern the place whence the bark had been removed.

Finding that ringing would not reach the evil recourse was next had to root-pruning, and as the trees showed such an amount of hardihood we determined that this business should not be half done. An excavation was accordingly made in front of each tree opposite the bole, and at about half a yard distance from it; and here we cut through every root which presented a barrier to such proceedings, feeling assured that some enormous tap roots had penetrated the subsoil, which is what is termed by the country people a "booty sand," that is to say, an adhesive material, which appears to blend the marly with the sandstone principle. After passing through or between huge black roots we indeed met with the tap roots, and really one tree stood more like a three-legged stool than anything else. Three huge black roots had struck down almost perpendicularly. Here, then, lay the true secret of the enormous amount of breastwood. These fangs were cut away, and a great sacrifice this appeared. We here found, too, the stratum of manure before alluded to at about 4 feet in depth, or nearly so; it had become in time a complete humus, or peaty-looking substance, and was crossed in all directions with roots. The soil was then filled in, and, it being the month of December, we waited with some anxiety to see how far this strong operation would affect the production of breastwood the following spring. April and May arrived, but what a change had occurred! The trees could scarcely develop a shoot of 6 inches in length all that summer, and we now found that cutting away the roots, or in other words restricting the supply of food, was a more powerful operation by far than merely arresting or clogging the vital action for a time by means of ringing. The trees now became short-jointed; spurs, real natural spurs, began to form, and thenceforward we began to eat Pears again. The trees have continued to bear tolerably good crops in most seasons since, but, strange to say, they are again inclined to become somewhat over-luxuriant.

I ought to mention here that the cutting of the roots was so severe that the main trunk of the trees (which I before named as nearly a foot in diameter at bottom, and might be about 6 inches at the top) sunk, and became detached from the wall which it before joined, and at this time the main bole hangs 6 or 8 inches from the wall at the top.

First in order, then, we would name the Pear as the most eligible for this operation; this, we think, has become tolerably manifest. Next to the Pear we think the Apple may be placed, then the Plum, next the Peach and Nectarine, then the Cherry and Apricot. We speak now of the ordinary wall fruits, and the order in which they are here placed is intended to point both to their vital powers of endurance, as also to the frequency of the cases which may be expected to present themselves to fruit growers.

To begin with the Pear, we must point to the fact that on the free stock this tree is peculiarly liable to tap roots. On the Quince it is quite another matter; here the roots are of the most fibrous character, so much so that we can barely conceive a case in which root-pruning becomes necessary. We, nevertheless, have some against us who, it would seem, root-prune even on this stock periodically. We must, however, remember the object, which is to produce trees so dwarf and compact in character that the holder of a score square yards may possess his miniature fruit garden and vegetables to boot. As to the free stock, then, if Pears are growing luxuriantly on these without bearing, it is almost impossible to root-prune too severely, at least the deeper roots. If in an orchard, and trees are of some size, they may be curtailed all round also; the amount of root removed bearing, of course, a direct ratio to the amount of luxuriance. In the espalier border we must be content to get at them how we can, remembering what we before observed that even the cutting of one side will assuredly affect the whole system of the tree, although perhaps not in an equal degree.

The Apple is found in such a variety of shapes and sizes that it is not very easy to generalise a system of root-pruning, at least so as to make ourselves generally understood by those who have not yet dabbled in its practice. We may first observe that the Apple even on the Crab or free stock is not quite so liable to tap roots as the Pear on the wild or free stock. Another point we may name also—the Apple with an over-severe amount of root-pruning is apt to become infested with red spider during the first summer after the operation. This we have repeatedly proved, and the remedy is sometimes worse than the disease. We introduce this caution to show that some degree of moderation becomes necessary, and that although root-pruning is correct in principle, yet it may be prejudiced in rash hands. We always deem it expedient, therefore, to apply a mulching to espalier or trained Apples immediately on the heels of the operation. This encourages surface roots, and prevents the too sudden operation of extreme drought, which, combined with root-pruning—the summer succeeding the operation—is almost sure to cause the tree to be infested with the spider, the scale, or what is as bad as either, that rusty-looking fungus on the leaf, which if not checked may soon break up the constitution of the tree. We have had much experience of this last enemy, to which light and hot soils are peculiarly liable, and the only cure for it, as far as our experience goes, is a permanency of moisture at the root.—N.

HEDGE PLANTS.

(Continued from page 463.)

COLLETIA HORRIDA.

I WILL now glance at another plant, not, I fear, plentiful enough to form hedges to any great extent, but I will ask, Has anyone used *Colletia horrida* for that purpose, for which its touch-me-not character would seem to fit it well? I believe it to be sufficiently hardy for most situations that are tolerably dry, and it is not so shy a grower as some plants are. It certainly has not the fault of growing so late in the autumn as not to ripen the ends of the shoots; for the growth being moderate and the habit good, it seems well adapted for a hedge or fence almost without training or pruning of any kind, and the shoots being always of a rich green hue, the appearance must be good. I should certainly think it must make a sturdy fence, as every bit of it is pointed, and I should say as difficult to approach by man or beast as any plant I know, unless it be some of the Cactus tribe. Furze has no chance with it in keeping out intruders.

COLLETIA CRUCIATA.

This is not a less interesting object for hedge culture. It differs widely from the above, but its spines are scarcely less formidable. The plant, I imagine, is also much less hardy, and of slower growth: it may be advantageously grown for its curious character, and its white flowers are likewise attractive, being in some seasons produced in great abundance; it is not yet plentiful enough to become a competitor with other plants to form hedges, although its habit and appearance entitle it to notice.

It is not intended in this article to enumerate all the numerous plants used for hedges. The most common are Holly, Yew, Box, Arbor-Vitæ, Privet (both alone and mixed with other plants), several Cypressess, Laurels, and the like. The term fence cannot well be applied to many of these, although they make highly

ornamental hedges, but I believe that *Berberis Darwini* might be advantageously tried for the former purpose; it is of sturdy growth, and if sheep and cattle could only be prevented eating it, it would quickly become a strong fence. Another useful *Berberis*, however, is *B. Wallichii*, and both make excellent ornamental evergreen hedges. The *Aucuba* is, perhaps, as easily kept in order as any evergreen shrub, and amongst ornamental deciduous plants the *Fuchsia* ranks high; but a good hedge may also be formed of the deciduous kinds of *Berberis*, of which the common one is, perhaps, the best, at the same time I fear its beauty will be sadly marred when subjected to the close trimming that hedges have to undergo.—J.

AMERICAN TUBEROSES AS WINTER FLOWERING PLANTS.

So greatly prized are these deliciously scented flowers for cutting purposes that their pearly white blossoms are welcomed at all seasons of the year; but more especially is this the case at the present time, when choice sweet-scented white flowers are as a rule not very abundant. We have generally grown a good number for flowering during the summer

begun to shoot the sooner they are potted the better. It is important that all side growths be removed as soon as they appear, or they will speedily rob the embryo flower spike, and in many cases prevent the plant flowering at all.—H. DUNKIN.

GOOD VEGETABLES.

As the time will soon arrive when the seed catalogues will be coming in, it is best to be ready to order seeds as soon as the catalogues arrive, as it not only gives the seedsman more time, but you can depend on getting what you order, which you cannot always do later in the season. I know that old hands do not require other people's selections; although, speaking for myself, who am not a very young one, I like to see other people's selections. But I know the first few years I had my seed order to send I was very glad of any hints given in the Journal. There are so many varieties in the catalogues, they are simply bewildering to the beginner.

Broad Beans.—Early Mazagan is a trifle the best for the first sowing, as it is a little the hardiest; but the advantage is slight, and the beans are very small. I make a sowing of this in November, but rely on Early Longpod for general crop for sowing when the weather is fit the end of January. This is followed by Green Windsor. The large-



FIG. 71.—COVENT GARDEN MARKET IN 1745. (See page 545.)

months, but this season some plants are flowering later than usual, and judging by their present appearance seem likely to supply a few blooms continually for some months to come. Some of the plants are daily developing good blooms, others are swelling up their buds, and some are just showing their flower spikes. Early in the spring we commence potting the bulbs in 3-inch pots, taking care to first remove all side shoots. As soon as roots are plentiful the plants are shifted into 5 and 6-inch pots according to their strength, using a simple compost of two parts loam to one of sifted horse droppings. These plants are then grown in a vinery at work till the flowers begin to unfold, when they are removed to the conservatory or intermediate house. From the time the first bulbs are potted others are potted to succeed them at regular intervals of two or three weeks till the allotted stock is used up. In this way we have hitherto easily maintained a regular supply of these much-esteemed flowers till October, by which time most of our plants have in previous years finished flowering, with the exception of a few that showed no sign of a flower spike. These, if taken care of and placed in a warm house, will generally flower early in the spring.

This season our latest were potted later than usual. I am not quite certain about the exact date, having made no note of it at the time, but if my memory serves me rightly the greater part of our plants that are now growing or throwing up flower spikes were potted early in July; and considering how useful they are at this time of the year it is doubtless a good plan to defer the potting up of a good number of bulbs as long as it is safe to do so, though of course when once the bulbs have

podded sorts are not so productive for table use. Dwarf French Beans.—Ne Plus Ultra I find is the best for forcing and sowing in frames, also for first sowing out of doors. Negro is a good one to sow with it, and comes in after the other is over. Runners.—I do not find the new varieties more productive than the old Scarlet.

Beetroot.—A little of the Egyptian Turnip rooted should be sown for early use. Cattell's Dwarf is good for general crop. Where Spinach is in constant demand the Spinach Beet is an excellent substitute, or to mix with Spinach when you run short; and it will sometimes stand through the greater part of the winter. I do not find cooks take readily to the Seakale Beet. Grow some by all means if they will use it, as it makes a dish when something fresh is wanted.

Broccoli.—Walcheren is excellent for early autumn. The Cape Broccoli are often recommended, but I never found them of much service. I find Veitch's Self-protecting the most reliable one to succeed Walcheren, followed by Snow's White, Osborne's White, Cattell's Eclipse, Veitch's Model, or Sutton's Late Queen.

Brussels Sprouts.—Sutton's Exhibition for early, followed by Veitch's Paragon.

Cabbage.—Heartwell, Myatt's Offenham, or Mein's No. 1 are good selections; Rosette Colwort for winter use and Blood Red for pickling. Cauliflower.—Early Snowball, King of the Cauliflowers, are good selections of Early London, while Veitch's Autumn Giant is indispensable.

Carrot.—French Forcing is the best for frames. Early Shorthorn for sowing outside to come in before the large sorts, of which the Long

Surrey is good; but Intermediate is best where the soil is shallow. In gardens where the Carrot crop is often a failure I have sometimes found them succeed in a poorer piece of ground outside. I have always had good crops of Carrots since I took to rolling or treading the ground

Dwarf for white. Chicory.—The Witloef. Cucumber.—Telegraph. Endive.—Improved Batavian and Digswell Prize. Leek.—The Lyon.

Lettuce.—Tom Thumb is useful of the Cabbage varieties. If a larger one is wanted Neapolitan is good. Most seedsmen have a superb White

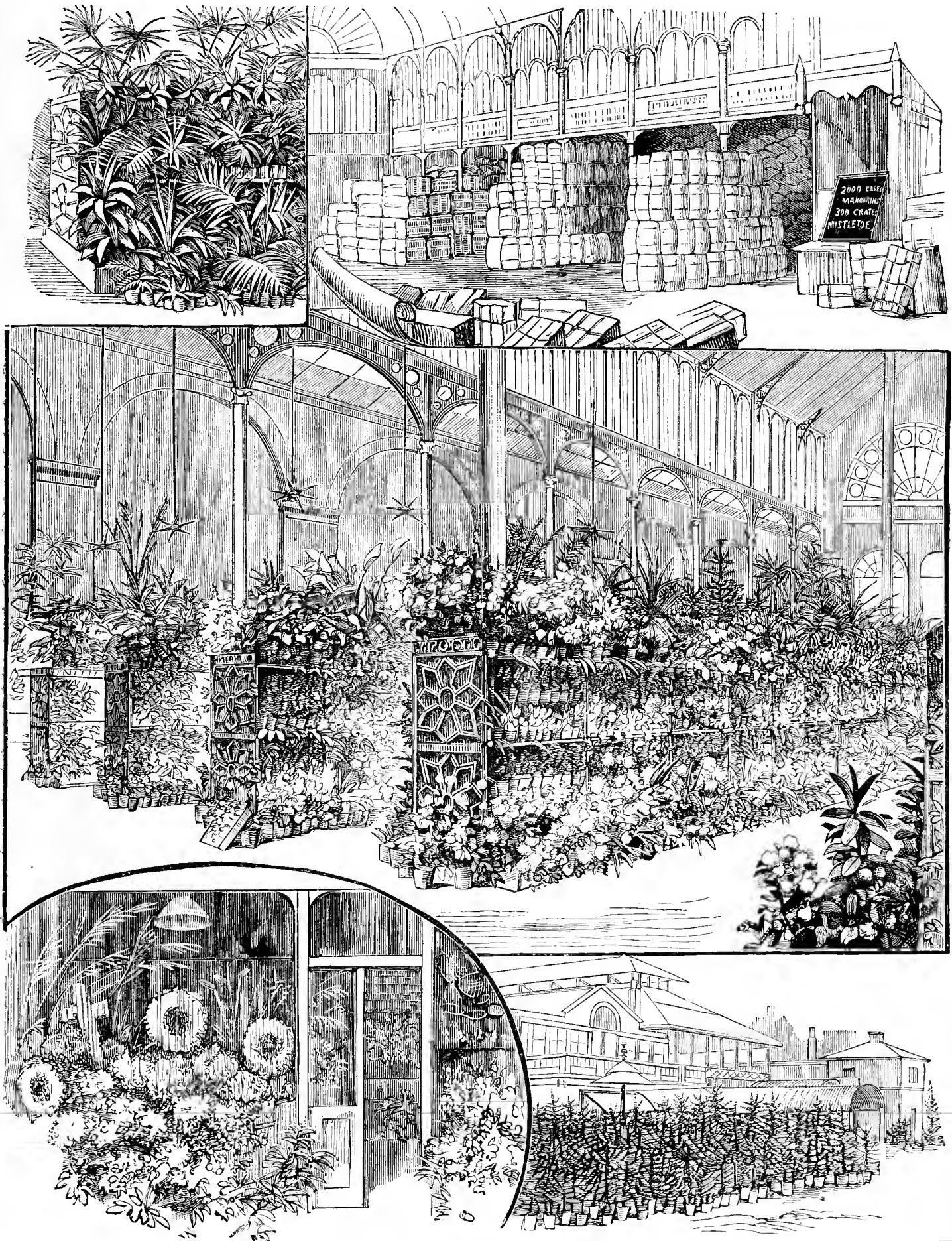


FIG. 72.—COVENT GARDEN MARKET IN 1889. (See page 545.)

well before sowing. What thinning is necessary is done as soon after they are up as possible, so as not to disturb the ground, as pulling them up does when they are larger.

Celery.—In my opinion Major Clarke's is the best, Sandringham

Cos of their own, which is often an improvement of Paris White, but sometimes the improvement is only in the price per packet. Hicks' Hardy White is the best for winter.

Onion.—This is another crop I make the ground very solid for when

sowing. I sow thinly, and if too thick I draw when very young and transplant. These often make the best Onions. Since I have adopted this plan I have not suffered so much with the grub. Does the system prevent it? Good sorts are Bedfordshire Champion, Danver's Yellow, James' Keeping, Red Italian Tripoli for winter, and The Queen.

Melons.—Blenheim Orange is a good scarlet, Eastnor Castle a good greenflesh.

Parsnip The Student.—To the beginner, perhaps this is the most difficult class, there are so many varieties (or rather names) to select from, and, in many cases, those that are highly recommended are the least profitable to the gardener. Many of those fine large podded sorts which are grown for exhibition are not good croppers. The best sorts for the gardener to grow are those with good flavour and good croppers. If they have large pods so much the better. Perhaps Telegraph is the most productive of the large podded sorts, but I consider Ne Plus Ultra the best gardener's Pea, combining as it does quality with quantity, and a continual bearer. But some of the improved Ne Plus Ultras are not such good and continual bearers as the original type. If I were confined to three sorts only, I should grow William I., Telegraph, and Ne Plus Ultra, but as I am not confined to so small a number I will add a few more. William I., Prince of Wales, Telegraph, Hundredfold, and Ne Plus Ultra.

Savoy.—I do not know one to equal Gilbert's Universal Savoy.

Spinach.—Sutton's Longstanding is the best I have tried for summer use, as it does not run to seed nearly as soon as the ordinary sort. The Prickly is the best for winter.

Tomatoes.—Hackwood Park Prolific.

Turnip.—Early Milan is the earliest, but it is not very good flavour; Early Snowball, and Veitch's Red Globe.

Pitatoes.—Rivers' Royal Ashleaf, Sutton's Early Regent, Beauty of Hebron, and Scotch Champion.—J. L. B.

NOTES ON CAMELLIAS.

THE Camellia is one of the easiest to grow of all hardwooded greenhouse or conservatory plants. Heaths and Azaleas are not so readily managed successfully, and they are also more difficult to restore to good health when allowed to lapse into a bad state. I am therefore greatly in favour of amateurs and growers of limited experience giving attention to Camellias. We have been cutting Camellias since the beginning of November, and there are still many buds to expand, but we do not think that Camellias generally—ours amongst the number—have been so good as in many previous seasons. The flowers have been more backward in opening, and they lacked their usual vigour. We attribute this to the deficiency of sunshine and maturing weather experienced during the whole of the time the wood and buds were developing, and if we thought that the coming season was to be as dull and backward, we should urge our plants into earlier growth than usual, that they might have a longer period in the autumn to gain a vigorous condition. By vigorous flowering condition I do not mean luxuriant growth and nothing more. Indeed I am never particularly anxious to secure undue luxuriance, as some of our plants which are most rampant are the least floriferous. A moderate growth, well matured, is far before great luxuriance in producing and retaining a profusion of buds and opening well formed blossoms. I put considerable stress on the word "retaining" as used above, because many Camellias may be grown rapidly to produce a great number of buds; but how many of these fall prematurely? This is attributed to various causes—excessive dryness at the root, and too much heat in the atmosphere; but buds that are well matured will pass through many vicissitudes.

It is immediately after flowering that mistakes ought to be rectified, and everything placed on a better footing, if such is wanted, for another year. Pruning is an operation which scraggy little plants in pots seldom call for, but it is a necessity with many planted-out specimens, as well as those in pots and tubs, that have become too large to be accommodated under glass. Healthy plants will bear pruning as well as a Privet, but it is a mistake to prune and cut back sickly specimens, unless it be to repot them, cut them hard in, and start them into growth sharply in a forcing pit. Those that are planted out and doing well in beds and borders are apt to push out until they obstruct the pathways, and to prevent this they should be cut back before growth is far advanced, but this should not be done in such a manner as to make them appear as if they had been clipped like a hedge. A flat surface on a Camellia is never graceful, and if they are cut in merely to avoid the path, and nothing more, the blooms that come out on the edge will be sure to be brushed and injured. The better way is to cut them back some little distance from the path, that they may have clear headway for a few years, and if the forward branches are cut out, and those in the background allowed to remain, there will be no appearance of a clipped surface. The same rule applies to cases of cutting them down when they are too near the glass. Often before the last of the blooms have expanded the young shoots have pushed forth several inches, but this should not deter anyone from pruning, as it will not prevent the plants growing freely on the old wood that remains.

During the time Camellias are in flower they cannot be syringed or washed without injuring the blooms, and it is best to keep water from the foliage then; but immediately flowering is over they should be thoroughly cleansed. If the leaves are only dusty syringing will generally suffice, but where insects exist the leaves must be well sponged. The time to do this is immediately pruning is over, and before the young growth is advanced; but healthy plants have a great power of resist-

ing insects, and their deep green glossy leaves are very pleasing. It is at the end of the flowering season that repotting or planting should be done. They do not like overpotting. Neat little bushes may be secured in 7-inch and 8-inch pots, and large plants in 10-inch and 12-inch pots. An additional root space of 2 or 3 inches at a time is ample. Perfect drainage is most desirable, and a soil consisting of half peat and half loam, to which a liberal dash of sand or grit has been added, will prove a satisfactory rooting compost. In potting or planting in any form the soil cannot be made too firm about the roots, as the roots soon take possession of a firm soil, and remain healthy in it. If Camellias are well planted out they invariably give much satisfaction, and they are less trouble than when in pots and boxes. There ought to be more of them in beds and borders, but those who contemplate turning them out should be warned against one rather common practice. It is this. Plants that are in bad health in pots may be regarded as hopeless are thought sufficiently good to plant out, with the avowed object of restoring them. This is a mistake, as if they cannot be revived in pots they never will in beds, and failure will be the rule in cases of planting out half-dead specimens. There are only two kind of bushes we recommend being planted out—one is healthy young plants, the other overgrown specimens, and with both of these excellent results may be secured. Bushes that are long and shy in starting into growth should be freely watered with soot liquid, and they should be syringed freely twice on all bright days, moisture in abundance being applied to the tops and roots of all plants disposed to grow rapidly.—M. M.

PALMS.

AMONG the numerous plants now cultivated for the embellishment of the interior of the homes of England, Palms are most useful. Their bold outlines, diversified forms, and graceful habit always command attention, as well as serving to show to greater advantage the colours of the flowering plants associated with them. Another great point in their favour is, that with careful attention in the matter of watering, and sponging the leaves occasionally with soapy water, the same plants will often thrive for months together in the drawing-room almost as well as in glass structures. I do not mean to say that this is the case with all Palms, as unfortunately some of the most beautiful, such for instance as *Cocos Weddelliana* and *Geonoma gracilis*, require to be changed frequently to prevent their falling into an unhealthy state. Happily there are many others of striking and varied beauty that can be depended upon to keep in robust health for a long time when used for house decoration.

An important point in their management which must not be overlooked is, to take each plant out of the vase in which they stand once every two or three weeks, wash the vases, and after replacing the plants cover the surface of the soil and pots with fresh moss. If this matter is not regularly attended to the water that passes through the soil and settles at the bottom of the vase in time becomes sour and unwholesome, and in not a few instances has been the cause of plants used for house decoration getting into an unhealthy state much sooner than they otherwise would do.

Those enumerated below are all reliable Palms for the purpose indicated, and collectively they supply great variety in the form of their fronds and in their habit of growth. *Areca Baueri*, *A. lutescens*, *A. sapida*, *A. crinita*, *A. Verschaffelti*, *Caryota sobolifera*, *Chamædorea elegans*, *glaucochylla*, *Chamærops excelsa*, *C. humilis*, *Cocos plumosa*, *Euterpe edulis*, *Kentia australis*, *K. Belmoreana*, *K. Fosteriana*, *Latania borbonica*, *Phoenix dactylifera*, *P. reclinata*, *P. rupicola*, *Thrinax elegans*.—H. DUNKIN.

MUSHROOM BED REFUSE.

HAVING a considerable quantity on hand and a good run of beds laid down this season, I am anxious to see how to turn the material to account in the cultivation of other crops for market, for which this manure would be well adapted.

Mr. Barter advised me to get a few acres of land and use up what I could not sell. What, then, would be suitable crops in rotation through the year?

I find a prejudice exists against the material "as used up" and "only good for potting." I tried it with French Beans this summer in the open, the result was a splendid crop; also I transplanted some Jerusalem Artichokes so advanced in growth that I expected, if they survived, to find nothing but stem and leaf growth. This was vigorous, but to my surprise the tubers are grand also, far surpassing the others. They had a liberal dressing.

I have had several analyses made, which do not bear out the misnomer "spent bed;" spent only so far as concerns the bed's capacity to produce Mushrooms, which evidently rob it but little of its original manure wealth. This seems to remain on hand, presenting the needful plant food in a more concentrated form. The analyses I have give over 1½ per cent. ammonia and 2 to 2½ per cent. phosphate of lime, with water under 50 per cent. When calculated on the dry substance the ammonia and phosphate of lime are only slightly under that found in ordinary farmyard manure, while the amount of moisture is considerably less—just under 50 per cent. as against 75 per cent. Surely, therefore, there should be a good field for its use in the way indicated.—MUSHROOM.

[The material evidently suits the soil of our correspondent, and as it has proved so satisfactory for the crops mentioned it will be suitable

for others. It is excellent for early Potatoes, and full crops of these are profitable, while the land is relieved in time for successive crops of Turnips, Horn Carrots, Spinach, Lettuce, Endive, Coleworts, Cauli-flowers, and winter greens generally.]



THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE annual dinner of the above Society, held at Anderton's Hotel, Fleet Street, on Thursday evening last, proved a success of a quite exceptional character, and one of the largest horticultural gatherings of the kind ever held in London. Over 170 members and visitors were present, the large hall on the basement of the Hotel being fully occupied. The five tables were tastefully decorated with plants, cut flowers, and fruits contributed by numerous friends of the Society, and some handsome Cordylines, Palms, &c., were supplied by Messrs. Laing & Sons for the adornment of the hall and staircase.

The President (Lord Brooke, M.P.) took the chair shortly after 6 P.M., and was supported by Sir Guyer Hunter, Sir Edwin Saunders, the Rev. W. Wilks, Capt. Molesworth, Mr. Shirley Hibberd, Mr. E. Sanderson, Mr. W. Johnson, Mr. McAllister, Mr. R. Ballantine, Mr. W. Lowles, Mr. W. Harland, and Mr. C. H. Pearson.

A long programme of toasts was provided, and the musical department, under the superintendence of Dr. Haskins, was a substantial addition to the enjoyment of the evening. The customary loyal toasts were proposed by the President in admirable terms, his remarks being received with loud applause. "The Continued Prosperity of the National Chrysanthemum Society" was next proposed from the chair, and Lord Brooke, in the course of an excellent speech, referred to the great advance that had been made in the culture of Chrysanthemums in recent years, and complimented British horticulturists on the success of their efforts. He thought, however, there was still one matter in which there was room for improvement, and that was in the odour of the blooms. He would like to see some sweet-scented varieties raised both for home use and exhibition, and he considered it a subject worthy the attention of those concerned in the improvement of the plant. As regards technical knowledge, he could not of course claim to equal many of those in the room, but he would yield to none in the love of plants and gardening generally, and he paid a graceful compliment to his gardener, Mr. Lister, when he said that much of the interest he felt in the subject was due to his efforts. The celebration of the Chrysanthemum Centenary next year was alluded to, and his lordship concluded with the expression of an earnest wish that the Society would continue its prosperous career.

An interesting ceremony was next performed—namely, the presentation of the medals and the challenge shield offered in competition to Chrysanthemum Societies throughout the kingdom. The first of the gold medals was presented to Mr. John Laing, who was followed by Mr. Henry Cannell and several others; and on behalf of the Wimbledon Society, which had won the challenge shield, Mr. Gibson, who represented the Society named in the competition, was appointed to receive it, and convey it to the successful Society for the year. The Hon. Secretary then announced that the whole of the prizes awarded at the November Show had been received by the winners, the money prizes having been forwarded by letter.

In replying for the prizewinners Mr. J. Laing said that he was a grower of Chrysanthemums forty years ago, and mentioned that the only variety then grown and still included in collections was Queen of England. Mr. Gibson also replied briefly and to the point.

The health of the President was proposed by Mr. Jukes and responded to by Lord Brooke, many other toasts following, and a centenary prize fund being opened a substantial amount was received before the close of the proceedings.

CUTTING DOWN CHRYSANTHEMUMS, &c.

I WAS pleased to see the note by "J. L. B." in last week's Journal under the above heading, as it opens up an important subject, and at an opportune time, touching as it does upon the two important matters—When is the best time to propagate? and topping to induce timely bud formation. So far as my knowledge and observation goes the latter practice is annually growing in popularity and general adoption amongst northern growers, at least with a very many varieties of Japanese.

I also am of opinion that the first question, relating to propagation, is of equal importance as regards obtaining the best bud at the right time as is that of topping. I have practised the latter for several years and closely watched its effects and results.

For those two late incurved, Eve and Mabel Ward, I found that propagation early in December and topping the first week in May had the desired effect. Meg Merrilies and its sports, Boule d'Or, Duchess of Albany (Jackson), Mr. H. Cannell, Mrs. H. Canuell, Gloriosum, Pelican, and other such late Japanese propagated late in December and topped middle of May came at the right time.

Thence onwards each week, throughout May, June, and to the first week in July, I have continued to top a few, taking into consideration their relative earliness and the condition of the plants at the time, those first topped being of course done with the object of hastening bud formation by inducing an earlier break than would accrue by waiting for the natural break, those topped so late as July being early comers, as Comte de Germiny, Edwin Molyneux, Baronne de Prailly, Fredk. Marrouch, Gorgeous, &c., and amongst which will, I believe, have to be included Laing's fine new variety Stanstead Surprise. These being topped after the July bud had formed and the first breaks commenced growing, taking these clear away, and causing the buds lower down to start and form breaks, thus retarding the plants at least a fortnight. The Teck family are not, I think, benefited by topping, and should be propagated not later than December. Nor do I think topping to be advantageous to the Queen family, providing they are propagated at the right time, and this I believe to be towards the end of January. I hope some of our northern friends will continue this discussion. What say our friends Messrs. Udale and Garnett? They have for some years past experimented and studied this matter closely, and can speak with the force of experience. Mr. Morton, too, of Darlington, whose knowledge of Chrysanthemums and their culture is second to few, tells me he cannot possibly induce his buds to appear generally at the right time only by this system of topping.—W. K. W.

GROUPING CHRYSANTHEMUMS AT SHOWS.

COMMENTING upon the remarks by Mr. Castle at page 479, Mr. Brown is desirous that Chrysanthemum committees should endeavour to fortify themselves against errors and complaints by making the wording of their schedules more explicit and clear before issuing their particulars for the next season's guidance. It generally happens that committees entrusted with the management of the different Chrysanthemum Societies throughout the country are usually aware of the circumstances best suited to the requirements of their own localities. In order to secure good local competition their schedules are compiled and worded in a manner best calculated to meet the individual necessities of local exhibitors, with open classes added, the wording of which is generally explicit and clear and based upon broad principles. With regard to grouping, the principal topic for argument, doubtless much misapprehension exists, although nothing can be more objectionable, as remarked by Mr. Castle, than an array of bare stems and stakes around the base of these purely Chrysanthemum groups; but when one is supported by the fact that groups of this nature can be made more effective by bringing the Chrysanthemum flowers and foliage to within 9 inches of the floor level, surely there is something to encourage the enterprising exhibitor to exercise his abilities, and endeavour to remove the objections at present existing against groups of this class. The next principle of grouping, as mentioned by Mr. Brown, is the same as adopted by the Hull and East Riding Chrysanthemum Society, and is beyond question a more artistic arrangement, and when the schedules stipulate, as in their case, a group of Chrysanthemums with foliage plants interspersed and arranged for effect in a space of 100 square feet, surely nothing can be clearer.

As to the extent foliage plants should be used in the arrangement of such groups, it rests entirely with the exhibitor's capabilities of knowing when he has produced the desired effect, quality depending solely upon the materials employed. Mr. Castle suggests a more artistic arrangement might be produced by a more extensive use of Ferns, Palms, and other decorative plants, with a few Chrysanthemums dotted in to give the whole effect. That such an arrangement would merit appreciation no one would attempt to deny; but a system of miscellaneous grouping at Chrysanthemum exhibitions would have some disadvantages. Valuable plants would be required in the arrangement, and when we consider the unpropitious nature of the weather during November there would be some risk of loss at a time when the decorative requirements at home demand great attention.—J. P. LEADBETTER, *The Gardens, Tranby Croft, Hull*.

AQUARIUM NOTES.

"ARE you going to write a report?" was the question put to me by a friend the other evening. "No," was my reply; there are those connected with the staff of the Journal who can do it so much better than I did not even venture to suggest it; but although I did not write a report I can give a few notes, for I grow some (not for exhibition), and endeavour to keep up my acquaintance with the new sorts, and the progress and well-being of the Chrysanthemum. There may be nothing in these notes—if so, I must apologise for inflicting them on the readers of the Journal.

I suppose it is pretty generally agreed that so far as cut blooms were concerned the Exhibition was not equal to those of former years; but, on the other hand, the groups of plants in pots were excellent. I do not think that I have ever seen one equal in point of merit to that set up by Messrs. Laing & Son of Forest Hill. There was an excellent mixture of Japanese and incurved varieties; the colours were exceedingly well mixed, the foliage very full and fresh, and the plants well furnished at the bottom; there was not an excess of training, and altogether it was a most delightful group. In some of the classes there was a painful excess of training, a practice which I think the National would do well to discourage. The Chrysanthemum is not an ungainly plant, and it cannot do without some support; but why should it be contorted and twisted so as to form an umbrella, a mop, or anything else? and yet that is what was to be seen at this Exhibition, and indeed at most

exhibitions where the Chrysanthemum forms the main, sometimes the sole feature. I remember when this excessive training was the rage for Azaleas, but at last people rebelled, and although they appear in fair numbers, yet the collections of huge extinguishers covered with bloom no longer attracts, but rather repels the public.

In looking at both the incurved and Japanese cut blooms I grieve to find in both two great errors. First of all the running upon size. It pervades everything in horticulture nowadays—big Grapes, big Cauli-flowers, big Onions, &c. Nothing is valued now unless it has size; the larger the better seems to be the motto of present day cultivators. But see what is lost. There was, for instance, that monster Etoile de Lyon a foot in diameter, but a coarse flower, which had indeed a good deal of the Etoile about it, but no beauty; its coarseness destroyed all interest in it. The other error is the dressing of the flowers. I have in my day taken part in many a stand-up fight on this subject. I have deplored it in the case of the Carnation and Picotee, but I got nothing for my pains, and now as then the success of an exhibitor depends not so much on the excellence of his culture of the flowers as on the skill of the dresser. This is applied not only to the incurved varieties, but to the Japs also, especially to such flowers as Comte de Germiny and others of that style. I do not think that it is at all necessary to do this. I have blooms of Mr. H. Cannell and Mrs. H. Cannell which have never been touched with tweezers, and yet they fold gracefully into the centre, and I am quite sure if I were to attempt the dressing I should do more harm than good.

I know that all this is very much like "crying in the wilderness." People will go on trying to get big flowers, and spending hours over the manipulation of their blooms. They do not, it is true, as far as I know, attempt to alter the character of the flowers, not, as it were, to turn a cupped into an imbricated flower, and an incurved flower remains an incurved flower still, but immense pains are taken to hide any defect and to make the flower as symmetrical as possible.

Of course when new varieties are spoken of, the first question was, Have you seen Mrs. Alpheus Hardy? and a general pilgrimage took place to St. Stephen's Hall, where the introducer had staged half a dozen blooms. In everything except size the plates and descriptions of it were not exaggerated. It is really a most beautiful and curious flower, valuable not only in itself, but as probably the forerunner of a new departure in Japanese. Already we are told that there is a pink variety of the same strange character. Whether it will ever be an exhibition flower depends on circumstances. It has no doubt been hurried on into growth for sale purposes, and like our newly introduced Roses we cannot tell much about it for a couple of years, but if it grows at all well, and the plant exhibited leads one to hope it will, it will be a general favourite. Of other new varieties the following were noticeable:—

Mrs. Falconer Jameson.—Very large blooms of chestnut tinge, shaded with yellow, very fine.

Avalanche.—This is a very beautiful and most useful flower, and its excellence was shown by the fact that all the prizes for six white Chrysanthemums were taken by it. It is of the purest white, large and well formed, the plant is vigorous, and the flowers are very freely produced.

Sunflower is, as its name imports, a large bright yellow flower, very massive.

Of flowers not quite so new there were good examples of Edwin Molyncux, Mr. H. Cannell, Mrs. H. Cannell, Mrs. J. Wright, Sarah Owen; and, indeed, I suppose they have found places in most collections, for the Chrysanthemum is so easily propagated that a new variety is not long in finding its way anywhere.

Amongst the miscellaneous exhibits, two Pelargoniums exhibited by Messrs. Cannell & Sons particularly struck me: one was Souvenir de Miranda, of a lovely shade of salmon and pink; and Richard Dean, a dark purplish crimson. They were exhibited in that perfection which even in winter he is able to attain.—D., Deal.

RUGBY CHRYSANTHEMUM SOCIETY.

THE annual meeting of this Society was held on Wednesday night, December 18th. L. Cumming, Esq., M.A., was unanimously elected Chairman for the evening. After a few introductory remarks he called upon the Secretary (Mr. W. Bryant) to read the Committee's report and balance-sheet for the year. The report stated that the number of subscribers to the Society is 188, a slight increase upon the number of members for the preceding year; and the balance-sheet also showed a rather better, although still a small, balance in the hands of the Society. In thanking Mr. L. Cumming for his admirable lecture upon "The Reason Why in Horticulture," the Committee hoped to obtain other members to help by giving lectures or reading papers, so that the preamble of the Society might be more fully carried out. The balance-sheet showed the total amount of receipts at £101 11s. 2d., and the expenditure at £95 12s. 8d., leaving a balance of £5 18s. 6d. upon the year's work. The Secretary in a few remarks pointed out that the money paid in prizes and specials amounted to £54, or exactly £1 7s. 6d. less than the list of subscriptions, showing that to meet the expenses of the Society it really depended upon the door money. He then went on to advocate the necessity of the Committee making the prices of admission as popular as they possibly could, and gave statistics of the number of persons paying at the different prices during the late two-days Show, which was rather interesting, as indicating that committees should provide for the masses. On the first day, from one to four o'clock, the price being 2s. 6d., only eleven paid at door; during the 1s. time, for both

days, 126 paid; during the 6d. time, for both days, 748 paid; and on the last evening, from six to half-past nine o'clock, the admission being 3d., no less than 925 (or more than half the total number) paid at door; the number of visitors to Show, including subscribers, being 2212. The Chairman then gave an interesting and instructive review of the Society's work, and was followed by Messrs. T. M. Wratishaw, W. Phillips, and others.

The date of Show for 1889, after a very animated discussion, was fixed for November 12th and 13th, many present considering it inadvisable to clash with Birmingham, a coincidence we should certainly say is regrettable and injurious to both societies, but more especially to the younger one.

GAY FLOWER BEDS IN SPRING.

I DO not know any plant or bulb that can surpass the homely Crocus for effect in the early spring when cheapness and durability are taken into account. In starting to plant Crocuses in the flower beds trench the ground thoroughly, and in the process incorporate 5 or 6 inches of good manure; also well break up the subsoil. Do not by any means bring any of the crude soil to the surface. If the staple soil be strong incorporate sweepings of walks, burnt refuse, old potting soil, old mortar, or even fine coal ashes, if nothing better can be had, as the Crocus is rather partial to an open soil. After the beds have been trenched it is a good plan to fork them, to assist in working the soil down more firmly; then run over the beds after forking with the garden rake, to work them into form for planting, the same as would be done for May bedding plants. Make the rows from 1 foot to 18 inches apart. Plant the clumps about the same distance from each other in the rows. If the beds are a geometrical group corresponding beds may be planted with corresponding colours, the same as bedding plants. Self colours of Crocuses make the best show. After the lines are marked out for planting place ten to twenty bulbs in a clump 8 or 9 inches deep, the bulbs half to 1 inch apart. It is well known that the Crocus makes a new bulb every year on the top of the old one, which helps to bring them nearer the surface. After planting rake the beds, then apply some short decayed manure, and bury it with the spade 1 or 2 inches deep. Some people might think that they would never see their Crocuses again after planting so deeply, but if the ground be in good order the grass or leaves of Crocuses will make appearance in due season. After the first year they will come up very fine, and well repay the trouble taken in planting. With care in planting and taking up bedding plants the Crocuses could remain without removal for eight or ten years. If the beds are given 2 inches of short manure every autumn after the bedding plants are removed that will be about all the care or cost they will require. A few good varieties are Fleur d'Or, Golden Yellow, Queen of Sheba, large yellow; Garibaldi, extra large purple; King of the Blues, fine purple; Marie Stuart, fine white; Mont Blanc, grand white; Queen Victoria, pure white; Van Speyk, beautiful violet and white striped.—DISENGAGED.

THE BULB MITE.

HAVING tried a very simple remedy for the destruction of the mite on various bulbs, and with good reason to be satisfied with the result, I beg permission to make it known through the pages of the Journal for the benefit of others who may be pested with the mite. I have not heard if such a simple method has been tried before, but if it has I should be glad to hear with what result. Previous to describing the method I adopted I wish to make a few remarks concerning the mite, and the various opinions expressed on the matter. Various causes are credited with the destruction of so many bulbs, especially the Eucharis, which appears to suffer most from the evil, caused, in my opinion, by the mite. But the Eucharis is not the only bulb affected; Pancratiums, Vallotas, and Amaryllises are also subject to its attacks. It is asserted that bad cultivation, over-watering, and checks being given the plants cause the mite to appear, and I have heard it stated that spontaneously with the decay of any matter insects will appear upon the scene. That I do not wish to dispute; but it is my opinion that the mite appears before decay take place, and that they prefer the young healthy roots to any decaying matter. If it was the decaying matter only they feasted upon cultivators would not begrudge them that. They appear to me to confine their operations chiefly to the roots, eating the tissues of the roots and leaving only the skin, making them like so many straws, and as fast as young roots appear so they share the same fate, until the vitality of the bulb is greatly impaired and it ultimately decays. As regards watering being the cause of the collapse of the Eucharis, I cannot believe that over-watering will harm them. When we consider that the Eucharis is a semi-aquatic plant, and will thrive growing in water, I think we must expel that idea from our minds. I have had them growing in a tank of water the greater portion of the summer without any harm to them; on the contrary, they were perfectly healthy, and at that time I did not know what the mite was, and it was that treatment that has since suggested itself to me the method I have adopted in dealing with the mite.

Last spring, having most of our Eucharises in a bad state, I had them placed in water, covering the leaves and pots with water, and left them for a day and a night. After they were taken out and the soil drained a little, the soil was shaken from them and the dead roots cut away, they were placed into fresh cut turf and leaf soil, which had previously been subjected to the heat of a newly turned heap of stable

manure for a couple of days, and then returned to a good temperature, where they soon filled their pots with roots, and are now as healthy both in root and foliage as one would desire, and nearly every bulb has flowered. They had abundance of water as soon as the roots got to the sides of the pots. Having no means of baking the soil, a hint received from the Journal, I followed what I considered the better plan of the two, in subjecting it to the heat of the manure heap, which also materially enriched it. Anyone having any suspicion of mite about their bulbs should try this plan.—W. SIMPSON, *Knowsley*.



DRESSING ROSE BLOOMS.

FROM the report of the annual meeting of the National Rose Society, which meeting I was unable to attend, it appears that another clause was added to section 8 of the "Regulations for Exhibitors." The section now runs thus: "All Roses must be exhibited as cut from the plants. Artificial aid of any and every kind is strictly prohibited, with the exception of wire or other supports, which are to be used only to keep the blooms erect. Dressing Roses so as to alter their character is also prohibited, also the insertion of any additional foliage." May I be permitted to offer a few remarks upon the clause which relates to the dressing of Roses?

I presume the term "dressing," as here applied means the manipulation of the bloom by the exhibitor in order to present it in its most perfect form, in his opinion, before the eye of the Judges. This result, however, may, or may not be attained.

Someone may say dressing never used to be heard of in connection with the queen of flowers, can it be necessary now? Yes, in my humble opinion it is in many cases quite necessary; for of many sorts, especially of the newer varieties, introduced within the last fifteen years, the robustness of the plants and the size of the blooms, together with hard pruning, thinning, and disbudding, have caused the flowers in several instances to be unable to develop themselves to their utmost capacity unless they have a little assistance. Dressing is practised by some of our exhibitors, and those not the least successful, and the man who neglects it does so at his peril.

Now with reference to the words, "so as to alter their character." Dressing is by this clause officially recognised. It is not as a practice that it is condemned, but only when we come to the result of dressing that pains and penalties threaten us. If the character of the Rose is preserved all is well; if, on the other hand, the character is altered or the bloom spoiled, disqualification is to be the punishment. But before this disqualification can be made, two points must be clearly proved—First, that the Rose is out of character; second, that this loss of character is the result of dressing. With regard to the first point take *Souvenir de la Malmaison* for an example, and consider in how many forms she presents herself—the flat, the cupped, and the globular high centre; or how variable the shape of *Beauty of Waltham*, sometimes like *Alfred Colomb*, *Marie Baumann*, or *Benoit Comte*. I venture to say it would be difficult to decide positively that a certain Rose is out of character. But suppose you have found such a bloom, you have next to decide the second point, that this alteration of character is the result of dressing. This you have to prove, but on what evidence? If you are a judge you have no right to stand by and watch the staging of exhibits you are soon to judge. How are you to obtain conclusive evidence that this particular bloom in question has been dressed?

Now I come to the worst part of the whole case. This question, as I understand it, does not rest solely with the judges, their decision is final only with reference to duplicates—see rule ix. The disqualification can be made at any time before or after the awards have been made by three members of the Committee, even after the exhibitor himself has gone home to prepare for the next show, and so unable to defend himself. I much regret that this clause, so difficult to carry out, has been added to our rules, more especially as it is unaccompanied by the necessary safeguard to all peace and goodwill, that the judges' decision shall be final.—JOSEPH H. PEMBERTON.

TWO GOOD LATE FLOWERING ROSES.

LA FRANCE amongst the bushes and *Souvenir de la Malmaison* amongst the climbing sorts are the two most prolific late flowering sorts I have any experience of. Both are pale in colour, both bloom so profusely as hardly to form sufficient wood to extend them. They are grand blooms, delightfully fragrant, and all who desire to have many Rose blossoms in perfection in October or even November should grow both.—B.

MANNERS AND CUSTOMS—A CATALOGUE COMMENTARY.

(Continued from page 530.)

Dr. Andry (Verdier, 1864).—Of capital growth and foliage, not much injured by mildew or rain, almost always comes well formed, imbricated with a point, early, of good size, good in petal, centre, and colour; lasts fairly well in shape, but not so well in colour; very free-

flowering, a row of it making a grand show for a few days, but not so good as an autumnal; a useful and thoroughly reliable Rose of strong constitution, which will do fairly in weak soil.

Dr. Sewell (Turner, 1879).—Rather weak in growth and foliage, liable to mildew and to burn, but not much injured by rain. Does not often come thoroughly good, but when it does is a fine distinct dark Rose of good shape and size, but not of high quality as a free bloomer or autumnal.

Duchesse de Caylus (Verdier, 1864).—See *Penelope Mayo*.

Duchesse de Morny (Verdier, 1863).—Of fair growth and foliage in good soil, the wood and leaves being very distinct and characteristic. Liable to mildew, but will stand some rain. The blooms come well shaped with very smooth stout petals, beautifully full, of distinct and lovely colour, large size, and fair lasting qualities. This Rose is one of the very smoothest and regular in globular imbricated shape that we have; a free bloomer, but not so good in autumn, and rather dainty as to soil and treatment. The shoots often come wholly or partially fasciated—i.e., laterally jointed together, either for a short distance or right up to the bud, and the buds should be well thinned, for this is one of the sorts where no fear of coarseness need be entertained.

Duchesse de Vallambrosa (Schwartz, 1875).—Of very strong distinct growth and foliage if it does well, but will not thrive everywhere. Not very liable to mildew, but cannot stand rain at all, and being of a very light colour may be injured by thrips in a dry season. The blooms have a decided tendency to come badly shaped, often with me having a gap or chasm in the outline, as if a wedge had been cut out. The shape is rather too open at the best, but it is of large size, fair in lasting qualities, and as an autumnal.

Duke of Edinburgh (Paul & Son, 1868).—Of strong good growth and foliage, with characteristic wood; the secondary shoots are very long, and rather spindly and pliable, so that the blooms are sometimes pendant. Not very liable to mildew, or much injured by rain. Generally comes true to its shape, which is good so long as it holds its point; but the petals are not very stout, or the centre very full, and it is not a good laster. Of full size and most brilliant colour, vermilion crimson. In strong specimens the crimson predominates when the bud shape is passed, but the self vermilion, which is generally found only on the weaker blooms, is perhaps the most effective. Not very lasting in shape or colour, but of large size, a free bloomer, and fair autumnal. This was for years the brightest of all red Roses. It was "The Duke" *par excellence*, as *Baroness Rothschild* was "The Baroness," though *Duke of Wellington*, not so bright, was of earlier introduction. A lady friend used always to pounce upon any red Rose in my garden that showed extra brilliance, saying that she knew what *that* Rose was—it was the *Duke of Edinburgh*. Of good hardy constitution, but rather apt to run to wood instead of to bloom, especially in autumn and on the *Manetti*.

Duke of Teck (Paul and Son, 1880).—Very like the last-named in most particulars. I do not know if there is any relationship; but different in colour, having much less of the dark crimson, and perhaps not quite so brilliant. The shape is also rather more globular and less pointed, but other manners and customs are the same.

Duke of Wellington (Granger, 1864) is marked in some catalogues as moderate—i.e., weakly—in growth, but is quite fair in vigour and foliage with me. Not very liable to mildew or much injured by rain, a free bloomer, and quite a good autumnal. The blooms come well in what I call the pointed form, and consider the finest shape of any. First class in petal and fullness, and grand in dark crimson colour and lasting qualities. Medium in size according to the N.R.S. catalogue, which I can quite believe to be the case where the growth is moderate, but well up to the average with me. Will not do in hungry soil or where not well treated, but high feeding and close pruning will generally produce splendid blooms. Older than the *Duke of Edinburgh*, and in spite of general repute, the best show Rose of the two with me. This is one of the Roses which close their petals in the evening, thus seriously disconcerting at times those exhibitors who have to choose their blooms at those hours.

Dupuy Jamain (Jamain, 1868).—Of very strong, stiff, stout growth and foliage, with vigorous clean smooth shoots, such as a Rose should have. Not liable to mildew, and but little injured by rain (I ought to say that almost all H.P.'s are sometimes attacked with mildew, except perhaps *Paul Neron* and *Ulrich Brunner*, and all are better without rain, so not liable must be generally taken as not specially liable). The round fat shoots of *Dupuy Jamain* produce round fat smooth blooms, which generally come well shaped, but the petals are not so stout as they look, and the centre is weak in hot weather. Of large size, but a bad laster; very free in bloom, and perhaps the best of all autumnals of its colour. If I wanted a red Rose at the end of October I should come here first, and if any H.P. will bloom at Christmas this will. A good and reliable cool season Rose, of strong hardy constitution, which will grow almost anywhere.

Earl of Dufferin (Dickson, 1887).—I have not had this Rose long enough to enable me to particularise its habitual manners and customs. I am afraid it has its little ways in requiring fine weather, and perhaps sometimes coming rough in outline, but it is not fair to speak of the habit of a variety till it has been tested during different seasons.

Edward Morreaux (Granger, 1868).—Of extra strong thorny growth, with rather rough foliage. Not liable to mildew, but being very full is very apt to be injured by rain. This is one of the coarse Roses, too full in petals, often badly shaped, and rarely symmetrically arranged. It

should be of the true globular shape, which is an exacting form where the bloom is so very double and full; but often the flowers come flat and open, more like Jules Margottin, from which it is a seedling. Very large, and a good luster; a free bloomer, but not a good autumnal. A big standard of this Rose in full bloom is a fine sight, and very effective, especially at a little distance. Very hardy, and of strong constitution.

Emilie Hausburg (Levet, 1868).—A weakish grower, with characteristic very green wood and foliage. Not much liable to mildew or to be injured by rain. The blooms come fairly well, but very late, generally too late for exhibition; of splendid globular imbricated shape, with good petals, but weak in the centre; good in lasting qualities and size, but by no means a free bloomer or a good autumnal. Thus this beautifully shaped and very distinct Rose is in a fair way to be discarded, being generally too late for exhibition and too shy in blooming and weak in growth to be useful for other purposes.

Etienne Levet (Levet, 1871).—Of robust and smooth but very uncertain growth; long, strong, and stout in rich soil, where it has a good hold, but otherwise quite short and stumpy. The foliage is very fine, and the blooms come well, with large, very smooth, shell-like petals; but the shape is open, the centre rather weak, and the form not lasting. Must be cut small for exhibition, and is not very reliable in hot weather. Not much injured by mildew or rain, but not good as a free bloomer or autumnal. Of large size, and its grand petals and smooth even outline make it an effective show Rose; but for general cultivation or on weak soils it is not one of the best.

Eugène Furst (Souper et Notting, 1875).—A very strong grower, with good foliage, liable to mildew, which appears even on the petals, but not much injured by rain. This is a Rose whose manner it is to waste all its strength upon the wood, and have none to spare to swell the bud. In H.P.'s and Teas we have some Roses which promise more than they perform, and others which perform more than they promise. Thus, in H.P.'s, this Rose has small blooms on very strong shoots, while François Michelin has very large blooms on thin small shoots. In Teas, the class of those who promise more than they perform finds exponents in Comtesse Riza du Parc, and (with me) Etoile de Lyon, while the good part of François Michelin is ably played by Comtesse de Nadaillac. Eugène Furst comes fairly well, of a good dark velvety colour and fair shape, lasting well. The blooms are late and not so numerous as they ought to be, though coming well again in the autumn; but it is an impostor, and wastes a quantity of good Rose nutriment on those sturdy, lazy, disappointing shoots.

Eugénie Verdier (Guillot, 1869).—See Marie Finger.

Exposition de Brie (Grainger, 1865).—See Ferdinand de Lesseps.

E. Y. Teas (Verdier, 1874).—Only moderate in growth, with fair foliage. Not much liable to mildew, and stands rain fairly. The blooms come well, very full, of compact, regular, smooth, globular shape, bright colour, and good lasting qualities, but decidedly below the average in size. Fairly free in bloom, but not much use as an autumnal.

Ferdinand de Lesseps (Verdier, 1869).—Synonyms, Exposition de Brie, 1865; Maurice Bernardin, 1861; and Sir Garnet Wolseley, 1875. This, though not the oldest, is probably the best known of the four declared by the N.R.S. to be identical. It is said that Sir G. Wolseley's lighter in colour than the others, but having given it up for several years I cannot now offer an opinion on the subject. Of good growth and foliage, rather liable to mildew, but not much injured by rain. The blooms come pretty well, of good globular shape and fair general qualities. This variety always seems to me to represent a fair average Crimson Rose, unusually free from peculiarities or special manners and customs.

Fisher Holmes (Verdier, 1865).—Of good growth and fair foliage. Particularly liable to mildew, but not much injured by rain. The blooms come well, of the good pointed shape of Duke of Wellington, which it slightly resembles. The N.R.S. catalogue speaks of it as "rather thin," but I have not found it so; on the contrary, with me the shape is lasting, though the brightness soon fades. Rather below the average size, but very free blooming, and a capital autumnal. This is a most useful sort, which accommodates itself well to circumstances—shuts up its petals at night, tightens its point in hot weather, and forms a beautiful buttonhole in the autumn, or when not thinned for show purposes.

François Michelin (Levet, 1871), of peculiar and very characteristic growth, with green, slender, yet fairly stiff stems, and thin poor foliage. This is the H.P. Rose *par excellence* whose performance is better than its promise. It seems incredible that those little buds on its spindly stems should open into what is one of the largest and finest show Roses we have; but they do. The petals look thin, and the growth seems so weak that an exhibitor, who did not know the Rose, would be slow to believe it would stand or hold its shape in a hot tent; but it does this too. But little affected by mildew or injured by rain, and coming generally well, but the centre, though almost always well covered, is sometimes not very regular. The outline is generally good, but the colour is not very lasting. Cannot be called a free bloomer, and is one of the very worst autumnals we have, a large proportion of the plants having no second crop. In propagating this Rose and others which are shy bloomers and bad autumnals care should be taken to bud from a flowering stem, for the young plant will probably not flower the first year if the bud has come from a "runaway" non-flowering autumnal shoot. Requires the Briar stock and rich generous treatment. We are

indebted to this Rose, I think, if we may judge from similarity of wood, &c., for one of the best introductions of late years, Mrs. John Laing.—W. R. RAILLEM.

(To be continued.)

HOLLYHOCK FUNGUS (PUCCINIA MALVACEARUM).

As a reader of the Journal I have been much interested in Mr. Alfred Bishop's valuable contributions. His remarks on "Fungus on Peaches," in last week's issue, page 505, have led me to ask, Can he recommend anything to destroy the Hollyhock fungus? The different species of parasitic fungi are now causing much alarm among horticulturists generally; few indeed are without their pet flowers, and as few, perhaps, are without some parasitic pest to blight their hopes, and often to destroy the work of years. From the simple Snowdrop of early spring, with which *Polyactis galanthina* plays such havoc when once introduced, to our summer queen the Rose, where orange fungus (*Coleosporium pingue*) wrestles hard for victory, on to our stately Hollyhocks, the glory of autumn, we have to fight with this destructive pest. It is in the latter flower that I am especially interested, and as I hold a valuable collection, a remedy would prove most acceptable, not only to me but to Hollyhock growers generally. Mr. Bishop is the first person I know who has been able to eradicate a parasitic fungus, and I hope he will throw a little more light on the subject, or perhaps our valuable critic, Mr. Tonks, would give us a wrinkle or two.

Mr. Bishop's remark at page 506, "I was now convinced the enemy was a fungus of some description, and treated the trees accordingly," leads one to think that he can eradicate my fungus. I hope, therefore, he will not take it amiss in my asking the name of his mildew composition, and whether he thinks it will destroy the Hollyhock fungus as effectually as that on his Peaches; if so Hollyhock growers may brighten up a bit, and we shall soon see the plant established in all its beauty. Will someone kindly tell us the origin and development of fungi, and also how they can be successfully eradicated?—G. STEEL.

THE SOURCES OF THE NITROGEN OF VEGETATION.

(Continued from page 406.)

It is not yet conclusively proved that the whole of the nitrogen of leguminous plants comes from the subsoil; it is equally not proved that it comes from the air; though in the case of crops belonging to other natural orders it may be affirmed that atmospheric nitrogen is not the source. May it be that the development of organisms capable of bringing free nitrogen into combination within the soil is favoured by leguminous growth and crop-residue, as there can be little doubt is the case with the organisms which produce nitrification? Frank has shown that on the roots of certain trees, especially the Cupuliferae, but also on Willows and some Coniferae, is a fungus-mantle which is believed to be in true symbiosis with the higher plant; and it may well be supposed that the fungus partly assists the tree by bringing the organic nitrogen of the soil into a form in which it becomes available to the chlorophyllaceous plant; much in the same way as has been observed by Gilbert in the case of fairy-rings, where the fungus, so to speak, prepares the nitrogenous nutriment for the grass. That the tubercles that are nearly always present on the roots of leguminous plants are in some way connected with the assimilation of nitrogen by the plants is an hypothesis that is gaining ground. Much study has of late years been devoted to the morphology and functions of these tubercles by, amongst others, Tschirch, Brunchorst, Frank, Van Tieghem, Lundström, and Marshall Ward; and still more recently by Bréal, Beyerinck, and Prazmowski. It seems almost certain that these tubercles contain micro-organisms, which are the proximate cause of the excrescences, and these may live in symbiosis with the legumes, and prepare their nitrogenous food possibly from free nitrogen. The tubercles are richer in nitrogen than the roots themselves, and some observers look upon them as being merely reservoirs of nitrogenous nutriment, not as manufacturing factories. Beyerinck (*Botan. Zeitung*, 1888) has obtained and cultivated an organism which he calls *Bacillus radicolica*, from these tubercles, and studied some of its reactions. It seems very probable that further study of these tubercles of the Leguminosae may put us on the right track for solving the mysterious nutrition of this order of plants.

In a postscript to the memoir the authors state that they have started some experiments with leguminous plants much on the same lines as those of Hellriegel and Wilfarth. The results of these experiments will be looked forward to with very great interest.

This memoir is a most welcome and solid contribution to a most important problem. It is quite obvious that the last word on the subject has not been said, and probably very much more work must be done before it is. The authors, from their own labours and thought on the subject, continued through so many years, are well able to criticise the work of others, and this they have here done, as far as most of the important papers published up to date are concerned, in an able and frank manner. If leguminous plants are able to avail themselves of the free nitrogen of the air, or if soils are able, through the agency of microbes or in other ways, to fix free nitrogen, the exact conditions necessary for the accomplishment of these ends is not yet known. The conditions of risk and exposure to accidental sources of nitrogen-gain in small experiments in the open air are very great, and experiments made under such conditions require very careful verification. Also the methods of

nitrogen determination used should be subjected to rigorous investigation and control, as also the methods of taking the samples used in analysis, which in the case of a complicated body like a soil presents great difficulty in obtaining a perfectly homogeneous mixture. The exact limits of experimental error in the various determinations want investigation. The subject, from its important practical bearings, is worthy the attention of a scientific commission who could give undistracted attention to it.

ROCK ROSES.

MANY species and varieties of the large genus *Helianthemum* possess sufficient attractions to render them worthy of more attention than they generally receive for planting in a variety of positions in the garden. The fugaciousness of their flowers is their chief failing, and doubtless that to a great extent prevents their being more appreciated; but although the flowers are of short duration individually, they are produced in abundance, and the colours are bright and varied. Most of the species are dwarf, erect, or trailing shrubs, and require a somewhat sandy or light soil. They succeed well on an ordinary rockery in nooks where more delicate plants would not thrive. They may also be planted in the mixed border or on banks, or in fact in any position where the soil is not too heavy. The popular name Rock Roses has been bestowed upon them because, owing to their five petals and numerous stamens, they bear some resemblance to the single wild Roses.

The best of the varieties and species are the following:—*H. vulgare venustum*, flowers small, of a peculiar bright crimson-scarlet colour, stamens yellow; very effective in dense masses. *H. v. macranthum*, flowers white with a yellowish tinge, very abundant. *H. v. serpyllifolium*, leaves small, bright green and smooth, flowers pale yellow. *H. v. roseum*, a compact little plant with numerous pretty rose-coloured flowers. *H. v. sulphureum*, flowers most profusely produced of a fine pale sulphur colour. *H. v. Lucy*, leaves dark green; flowers semi-double, purplish pink. *H. libanotis*, long linear dark green leaves, flowers small, yellow; a very distinct and old species. *H. rugosum*, a small trailing shrub, flowers bright yellow with a dark maroon centre; attractive and pretty. *H. polifolium*, downy leaves, white flowers, and yellow stamens, very pretty; this is a British species. There are, in addition to those enumerated, several very good double forms of *H. vulgare* that are bright and rather more durable than the single varieties.—C.

BULLFINCHES.

I HAVE been much interested by the correspondence on bullfinches, but I certainly cannot agree with Miss Ormerod's theory concerning the insects in buds. If every bud which these destructive birds pick out contained an insect we should have no fruit in this garden, for they simply begin at the top of the bush and take every bud out to the bottom; therefore if each bud contained an insect the birds may as well have them as leave them, for in either case we should have no fruit.

Have any of your correspondents observed any increase in the numbers of this beautiful bird? We have seen more in this garden this season than for many years past. They began on our Currant bushes with a vengeance as soon as the leaf was off, consequently we were obliged to apply our winter dressing much earlier than usual, which has proved effectual without exception "against all kinds of birds." It consists of soot, lime, Gishurst compound, and softsoap mixed with warm water, strained through a fine sieve, and applied to every part of the trees with a syringe. It sticks well to the trees, and since its application I have not seen where a single bud has been picked out. We are in the midst of birds of every kind. On the north side of the kitchen garden is a thickly wooded park and shrubberies literally swarming with birds. On the east we are sheltered by a town, just the home for the house sparrow, so it will be readily understood how we are situated. But I am a friend of birds, and can say truthfully that I have not allowed a single bird to be destroyed in these gardens this year, and the few fruits they have eaten have not been missed. I must confess they try my patience to the uttermost just as the Pears begin to ripen, for then they spoil many of the finest fruits, and it is impossible to protect all the trees from the daring sparrow and the impertinent little tomtit.—T. A. C.

ASCLEPIAS CURASSAVICA.

THIS species is one of the most attractive of the peculiar and interesting genus *Asclepias*, and its bright flowers very pleasantly enliven the appearance of a stove or intermediate house at the present time. As the cultivation of the plant is by no means difficult and the flowers are produced freely, it is not surprising that it should have early received the attention of cultivators; but even now, although introduced in 1818, it is not nearly so generally grown as it deserves. This is a South American species, and it bears numerous umbels of flowers the petals of which are reflexed and deep orange in colour, while the small cup-like appendages that form the staminal corona are bright yellow. The contrast is a very pleasing one, and the brightness of the colours is relieved by the dark green simple leaves that clothe the stems. There is also a white-flowered variety that is well adapted for a companion to the ordinary form.

In the treatment of these plants no especial skill is requisite, and few plants, considering the little attention they demand, produce more gratifying results. Propagation may be effected by cuttings, seeds, or

division of the plants, but the former method of increase is the most satisfactory. Cuttings should be prepared in the usual way early in spring and inserted in light sandy soil, the pots being placed in an ordinary propagating frame. When the cuttings are well rooted they should be carefully turned out of their pots and separated, injuring the young tender roots as little as possible. They may then be placed in 60-sized pots, employing a compost of loam, well-decayed manure, peat or leaf soil, and sand. As they fill the pots with roots shift the plants into larger pots and place them in the stove, supplying water freely. Flowers will be produced the first season, and a stock of these small plants is always useful for decorative purposes. As the plants go out of flower late in autumn remove them to a cool position, partially withholding water during the winter. In March turn the plants out of their old pots and remove some of the soil from their roots, repotting in the compost previously recommended. To obtain a succession pot batches of plants in March, April, and May, and by this means a supply of flowering plants can be maintained from June till October.—L.

NORTH AMERICAN SHRUBS.

(Continued from page 492.)

THE Choke Cherry, *Cerasus virginica*, with its panicles of white flowers, is one of the prettiest of our May flowering shrubs; its odour is rather agreeable, and its sour, red berries are eagerly eaten by the birds, and a single bush by a quiet roadside will frequently contain a dozen species of birds in a late August afternoon. A smaller shrub, called Choke Berry, *Pyrus arbutifolia*, has remarkably pretty clusters of white flowers with dark red anthers and very glossy leaves, and is usually found growing on the borders of open woods or moist roadsides.

Not a hedge, or sloping rocky hillside, or neglected field in all New England, but one can find, in June or July, the rosy pink buds and blossoms of one or more species of the single wild Rose. *Rosa lucida*, with few scattered prickles; *Rosa nitida*, with dense red ones; *Rosa blanda*, with few prickles, but no shine in the leaves; *Rosa carolina*, with recurved prickles; and the Sweet Briar, with its smaller and fragrant leaves, and its great, stout, thorny branches. Blackberry Vines are not generally looked upon as ornamental, but they are a pretty sight when growing by the roadside, overtopping all other shrubby growths with their masses of bee-haunted, snowy flowers, with occasionally the golden-yellow, black-spotted Turner's butterfly hovering above them.

The *Crataegus*, or Hawthorn family, blooms the latter part of May in New England. The flowers of all species are very fragrant, and the shrubs, which are almost trees, are all armed with sharp thorns, and the leaves are lobed and crenate. The calyx remains on the scarlet fruit, which turns brown after frost, but hangs on until eaten off by birds in the late winter. The flowers of *C. Crus-galli* are larger than *C. punctata* or *C. coccinea*, and none of these are as pleasantly fragrant as *C. oxycantha*, or the English Hawthorn, with its already naturalised in many parts of New England, and whose clusters of flowers wreath the thorny branches so densely as to hide the small shining leaves which are about half grown at the time of flowering. The petals of all these take a pinkish tint before they turn an ochreous brown and fall off.

The climbing shrubs that are called Honeysuckles are somewhat rare in New England, with the exception of *Lonicera parviflora*, which is commonly known as Woodbine. Its whorls of yellow, red tinged, tubelike flowers are succeeded by orange-scarlet, soft, pulpy berries. It is a slow grower, but is hardy, never troubled with insects, and blossoms profusely in May and June. One of our few yellow-flowering shrubs is the *Diervilla*, or Yellow Honeysuckle. It is common in thickets and bush lands, and is well known by its opposite, deeply notched leaves and its clusters of faint-scented yellow flowers, which appear in June.

One of the handsomest of all our native shrubs is the Elder, *Sambucus canadensis*. Its glossy pinnate leaves and great flat cymes of creamy white fragrant flowers make it a very desirable addition to our list of shrubs that should be cultivated. A basket of Elder flowers and Roses is "a thing of beauty" that will be "a joy for ever" in the memory. The *Viburnum* family supplies us with many flowering shrubs, of which the best known is the Cranberry Tree, *V. Opulus*, whose white radiate cymes are succeeded by large scarlet berries, which resemble the Cranberry in appearance and taste, and are used as a substitute for it in many places. *V. Lentago*, or Sweet Viburnum, has spreading cymes of white flowers in June, and black sweet berries in late autumn. The berries of *V. nudum* are bright blue covered with a bloom, and are dainty bites for the birds preparing to migrate.

A shrub that always attracts attention in the swamps is the *Cephalanthus occidentalis*, or Button Bush. It is easily found by its round ball-like heads of white flowers, which remind one of the seed-balls of the Buttonwood or Sycamore. It is in bloom in August. The greater number of our shrubs flower in May and June, and this is particularly true of the Heath family, the colours of whose flowers are in tones of white or red, no yellow or any suggestion of blue. The Huckleberries and Blueberries are so pretty, with their clusters of pearly white or pink bells in the open woods or the rocky pastures, but they will not bear transplanting.

The beautiful Laurel, *Kalmia latifolia*, is the queen of New England shrubs, with its magnificent cymes of flowers in all shades from white to deep rose. Its glossy evergreen leaves are said to be poisonous to cattle. Here and there in low woods, and especially in burnt-over lands, we step over the little bush called Sheep Laurel, *Kalmia angustifolia*. Its small clusters of purplish-pink flowers would be thought pretty if it did not suffer by comparison with its lovely relative.

The trailing shrub which grows dearer each Christmas-tide is the *Arctostaphylos Uva-ursi*, or Bear Berry. Its long branches so thickly set with the small, ovate, glossy evergreen leaves, varying in colour from the dark green nearest the roots to the shining red ones on the tips of the youngest branches, make it our favourite evergreen. It retains its colour and beauty through the winter in the house, but its few scarlet tasteless berries drop off almost as soon as it is gathered. Its dainty pinkish bells hang from the under side of the branches in May and June. Helen Hunt Jackson's description of the Kinnikinnick Vine, of Colorado, applies equally well to its near relative, the Bear Berry.

Look through the trees and catch a glimpse of that great rosy cloud, draw nearer, and the dearest flower to New England is before you, *Azalea nudiflora*, or Swamp Apple, or Honeysuckle, as it is variously called. Break off the great pink balls of fragrance and loveliness, and put with them the feathery young green shoots of the Hemlock, and as you look at them lovingly, thank God for the beauty of bleak New England. *Rhodora canadensis*, with its naked, smooth, brown twigs and the purplish-pink flowers clustered on their extremities, is met with by the roadsides the last of May. It is always noticed by the entire absence of leaves, although a late season sometimes shows a tip of pale green among the flowers.

Seldom found in the interior but abundant on the sea coast, filling the air with its spicy fragrance, grows the *Clethra alnifolia*, or Sweet Pepper Bush. Its long, white, waxy spikes stand upright; in some localities it is found growing 10 feet high. Its usual height is 3 to 5 feet. It grows abundantly about some inland ponds, as well as on the edges of salt marshes, and in both places seemingly disputing the right of way with the graceful climbing Clematis, or Virgin's Bower, which last appears to conquer, as it waves triumphantly in the autumn sunshine, its feathery, plume-like seed vessels for banners of victory, mingled with the blood-red leaves of the tall Blackberry.

No one notices the Black Alder, *Prinos verticillatus*, in summer, but when the leaves have all fallen from the dense bush-growth in the moist low lands, then the eye is drawn thither as if by magic. A north-west wind, a whirl of the leaves, and lo! the swamp is aflame; the scarlet berries gleam in the sunshine like g'obes of fire. Sassafras is well known by its aromatic fragrance, which is in root and bark as well as in its curiously lobed leaves. *Benzoin odoriferum*, or Spice Bush, is known by its golden-yellow flowers, which appear before the leaves in May, and are followed by ovoid scarlet berries in autumn. Frost comes, and along the roadsides the fuzzy involucre of the Hazelnut expands, disclosing the sweet well-flavoured nut that the farmer's boy, driving the cows at sunrise to the meadow pasture where the grass is still green, stops and fills his jacket pockets with, as he whistles merrily, as only a farmer boy can. The *Corylus americana* is our only nut-bearing shrub. Along the banks of streams in most parts of New England grows the *Alnus serrulata*, or Smooth Alder. Its clusters of dark brown fertile aments hang on all winter, and the yellow pollen of the sterile ones in early spring turns them with its Midas touch to gold when the air is still.

Many of us who in childhood have had our burns and bruises rubbed over with grandmother's Bayberry salve have an affection for the low-branched shrub, *Myrica cerifera*, with its pungent spicy odour, and its green ovoid berries covered in a waxy tallow, which we have gathered so many times in a sloping pasture lot on an old farm in Connecticut. We always find the dear old Sweet Fern, *Comptonia asplenifolia*, in the same locality, not half so readily noticed in the summer when its low growth is hidden by taller shrubs, but when the leaves have dropped in autumn, then the Sweet Fern dots the pastures with its long burnt sienna-coloured patches, making a vivid contrast to the red-capped Lichen at its roots, which is called by the little ones, "Robin Hood's merry men in green."

Indian summer comes, and the pale purple haze hangs between us and the hills. The leaves with no vestige of their gorgeous autumn tints remaining, lie in scattered heaps upon the ground. Only the Oak rattles his brown foliage in defiance, when the Witch Hazel, *Hamamelis*, sends out its pale blossoms, its long, narrow, twisted petals having an uncanny look against the background of the Hemlock. The woody capsules, with their two white seeds, seen like elfish grinning brownies daring you to pluck these last blossoms of the year. The yellowish sessile flowers remain on the greyish-brown branches all winter, and it is not so rare a thing to find the long petals twisted about each other still retaining their colour, but dry and papery, when in your woodland walk, on some May day that has walked backward into April you gather the first unfolding blossom of the *Dirca*.—FLORENCE I. W. BURNHAM (in *Vick's Magazine*).

Cucumber in winter, and now the days are so short keep the glass as clean as possible both inside and out. Do not apply strong liquid manure too freely, as it is the reverse of good treatment to stimulate them unduly at any time. The soil, however, applied to the roots should be rich and sweet. Be careful not to overcrop the plants, and do not allow the fruits to hang too long. They keep fresh several days after being cut if the "heels" are inserted in saucers of water in moderate heat. Remove superfluous fruits as they appear, and tie the growths as necessary. Red spider should be subdued by syringing the infested leaves with a weak solution of softsoap 2 ozs. to the gallon—a safe remedy, but care must be taken not to damage the leaves. If mildew appear, dust the affected parts with flowers of sulphur, and reduce the atmospheric moisture. Green or black aphides may be destroyed by dusting them with tobacco powder, or fumigation on two or three consecutive evenings moderately. An overdose may do irreparable injury.

Where early Cucumbers and Melons are obtained from frames or pits heated by fermenting materials, some fresh Oak or Beech leaves should be thrown together, with one-third of stable litter, and, if necessary, be moistened so as to induce fermentation. It should be turned when warmed through, alike to sweeten, to bring all into a genial state of warmth by turning the outside to the inside, and to induce thorough incorporation of the materials.

PEACHES AND NECTARINES.—*Earliest House*.—Cease syringing the trees when the blossoms show colour, maintaining, however, a moderate moisture in the house by damping the floors on bright mornings and in the early part of fine afternoons. The temperature may be maintained at 55° by day, 50° being sufficiently high for the night, and if the temperature fall to 45°, and in very sharp weather to 40°, it will be more an advantage than otherwise. Examine the inside borders, and give if necessary a thorough supply of water at a temperature slightly in advance of that of the house.

Second Early House.—The trees for affording fruit at the close of May or early in June must have their final dressing if one be necessary, be tied to the trellis if not already done, and the border inside well watered, as nothing tends so much to encourage the development of strong flowers as a good soaking of liquid manure not cold enough to chill the roots. The house should then be closed, employing no more fire heat than is necessary to exclude frost, damping the trees in the morning and early in the afternoon of bright days. Fire heat must be applied to raise the temperature to 50°, but not more, and above that air must be admitted freely. Protect the outside border with dry fern or litter, and if means are at command for throwing off heavy rains or snow it will be desirable to employ them.

Succession Houses.—Push forward pruning and dressing trees after loosening them from the trellis, cutting out any weak attenuated wood, and where crowded thin well, leaving space between the current bearing wood for training in that intended to displace it. Secure the branches at once to the trellis, leaving space in the ties for the swelling of the shoots—i.e., secure loosely. The surface soil should be removed down to the roots without disturbing them, and give fresh material—good tufty loam with an admixture of well decayed manure, about a fourth, and a twentieth of steamed bone meal, not covering the roots more than 2 or 3 inches deep. Carefully examine the inside borders, as dryness at the roots will cause the buds to fall later on.

Houses that are to be started early in next year should be kept cool. If the lights have been removed let them so remain until it becomes necessary to replace them for starting the trees. Complete the needful operations in cleaning, pruning, and dressing, also tying the trees to the trellis.

FIGS.—*Unheated Houses*.—Unloose the trees from the trellis or wall, have the branches tied together in convenient bundles, and cover them with a single thickness of mat and then some dry straw or fern a few inches thick, securing with tarred string, mulching the roots with some short rather littery material to a depth of not less than 6 inches; this insures safety to the roots, whilst the covering with straw or other material will not only insure the branches against frost, but tend to a more complete state of rest.

Unsatisfactory Trees.—These may be due to various causes. It is usually on account of the soil; there may be too much, or it may be too rich and loose. A dressing of lime an inch thick may be pointed in as deeply as the roots will permit without disturbing them much, and after resting a time and when in good order tread it firmly. If the trees make long-jointed wood the better plan is to lift them carefully and replant, making the soil more firm, using the lime all the same. If the borders are wide restrict their area, and if the soil be of a light nature an admixture of clay marl will improve the staple, tend to encourage shorter-jointed wood, and increase the size and quality of the fruit.

PINES.—Preparations must be made for producing ripe fruit during the months of May and June. Smooth-leaved Cayenne, Black Jamaica, and Charlotte Rothschild, which failed to show fruit during October and November, will not now throw up in time to ripen at the period in question; and attention must be directed to such as attain perfection in less time, such as the Queen, Enville, Providence, &c. Choose at once these plants which have an enlarged base, with a tendency to open at the centre, signs of the fruit being shortly visible, placing them in a light house or pit, affording brisk bottom heat of 85° to 90°, a top heat of 60° to 70° at night, 70° to 75° by day, and 10° more when the external conditions are favourable. A genial atmosphere should be maintained, but not produced by steam resulting from syringing the hot water pipes, as syringing the plants once or twice a week is ample, and



FRUIT FORCING.

CUCUMBERS.—The weather may not have necessitated sharp firing, but there has been an absence of sun, which generally results in a weak attenuated growth. Light is very important in the cultivation of the

then very lightly, on fine afternoons damping the house. See that the soil is in a proper condition as to moisture, using tepid water with a dash of guano or some fertiliser in it, applying it copiously when required, which will be about every ten days.

THE FLOWER GARDEN.

Herbaceous Plants.—When the ground is fairly dry, and the weather mild, advantage may well be taken of a favourable time to lift, divide, and replant many of the stronger growing hardy occupants of the mixed or herbaceous borders as may need it. All in time become either too large for the site, or else present a less healthy appearance, owing to having exhausted the stock of food contained in the soil. The first to become crowded and exhaust the soil are the Phloxes, Delphiniums, Spiræas, Campanulas, Potentillas, Hemerocallis, Asters (Michaelmas Daisies), Pyrethrums, notably *P. uliginosum*, Heleniums, Chrysanthemums, Helianthus (Sunflowers), and *Anemone japonica*. About every third year these pay well for lifting, dividing, and as many as are required replanted, either in their old stations, after some fresh soil and manure has been added, or, better still, in quite fresh quarters. When crowded and starved, the flowering season is frequently of short duration, especially if they have to pass through a hot dry summer; whereas, when freely divided and replanted in fresh rich soil, they are much less affected by drought, and in any case the quality of the flowers is superior. Plunging forks, and in some cases ordinary digging forks, are much the best for dividing strong clumps, and when replanting the divisions take good care to well bury and firmly fix the soil about the roots, without, however, unduly lowering the hearts of the plants. Less vigorous plants, and which are too numerous to name here, may well remain undisturbed for a much longer period, or say double the time of the strong growers, and these require to be more carefully handled.

Re-arranging Herbaceous Plants.—Not unfrequently old, and, it may be, somewhat neglected mixed borders, would be greatly improved by being re-arranged, and on the whole the present time is, weather permitting, as suitable as any for this important work. It is true they are more often taken in hand in the spring, but in most gardens there is usually much other work to be attended to, and besides this also greatly interferes with the display made by early-flowering bulbous plants. Old clumps of the latter are in many instances now rooting freely, and at this stage of growth may be lifted, divided, and replanted without detriment to their flowering either during the next or following spring. Supposing it is decided to completely re-model a border, the first proceeding should be to well scrape back the loose gravel on the walk near at hand (and such are very general), and on this set the clumps of plants and bulbs, according as these are carefully searched for and forked out of the ground. If the nights are somewhat frosty, or the weather unsettled, too great a length of border should not be broken up at one time, or not more than can be trenched and replanted in one day. In most cases double digging or bastard trenching only ought to be resorted to, abundance of half-decayed manure being mixed principally with the top spit. There is no necessity or wisdom in returning the plants to the borders in formal lines, the better plan being to plant them somewhat irregularly, due regard being paid to the respective heights of the species and varieties, care also being taken to well mix them so that the early flowering kinds may alternate with those much later in coming into flower. Nor is it advisable to plant rather thickly, there being a considerable number of half-hardy plants that room should be found for in herbaceous or mixed borders. All, whether bulbous or otherwise, to be correctly labelled, the simplest and best kind of label being made from 1 foot lengths of sound Hazel rods, these being pointed at one end, and faced and painted white at the other. Mulch with manure or leaf soil after the border is planted.

Manuring and Mulching Borders.—The least that can be done to an herbaceous border is to thoroughly clean and mulch it at this time of year. All tender plants, whether dead or not, ought to be removed, and the dead tops of the hardy occupants trimmed off, and these, with any weeds there, may be consigned to the rubbish heap for burning. The surface of the border may then be very lightly and carefully forked up, the greatest care being necessary where many bulbs are grown, after which a liberal dressing of partially decayed manure, with loam added if it can be spared, and also charred rubbish, or the contents of a "smother" generally should be applied. Old Mushroom-bed manure is good for the purpose, and so also is a heap of leaves and manure that may previously have done duty as a hotbed or Vegetable Marrow heap. This mulching will answer the double purpose of enriching the border, and also to a certain extent as a protector of the roots from severe frosts. Bulbous-rooted plants, if planted sufficiently deep, are, as a rule, quite hardy, but if within 2 inches of the surface they may well be protected with a mound of either ashes, cocoa-nut fibre refuse, or leaf soil.

A Selection of Hardy Flowering Plants.—There is an almost unlimited number of species and varieties of serviceable and beautiful plants suitable for filling mixed borders, and which may be purchased and planted at the present time, the only exception being where the pieces are too tiny to be trusted to the tender mercies of slugs and other enemies, including a careless gardener's feet. The following, arranged much in their order of flowering, would be found very satisfactory:—*Leucojum vernum*, Snowdrops, Crocuses, *Chionodoxa Lucilæ*, Narcissi and Daffodils in great variety, German Irises, *Anemones appennina*, *syvestris* and *fulgens*, *Cheiranthus alpina*, *Polemonium Richardsi*, *Ibericus gibraltarica*, Alpine Auriculas, *Primulas Sieboldi* and *vulgaris* in variety, *Dodecatheon Jeffreyanum* and *media*, *Gentiana acaulis*,

Aquilegia, hybrids of *cœrulea*, *californica*, and *glandulosa*, *Anthericum liliago* and *liliastrum*, *Dielytra spectabilis*, *Campanulas glomerata* and *dahurica*, double Pyrethrums, *Centaureas montana* and *alba*, *Erigeron aurantiacus*, *Hemerocallis flava*, *Lupinus nootakaensis* and *polyphyllus*, *Ornithogalum umbellatum*, *Papaver bracteatum*, Solomon's Seal, *Trollius asiaticus*, *Verbascum phœniceum*, *Tradescantias virginica* and *alba*, double Potentillas *Gloire de Nancy* and Dr. André, double white Rocket, *Geraniums armenum* and *ibericum*, *Erigeron speciosus* and *macranthus*, *Dianthus barbatus magnificus*, hybrid Delphiniums, including *Belladonna* and *formosum*, *Asphodelus luteus* and *ramosus*, *Pæonies* in variety, Spanish and English Irises, *Veronica spicata*, *Spiræa aruncus*, *filipendula plena* and *venusta*, *Pentstemon barbatus*, *Oenothera speciosa*, *Galega officinalis*.

PLANT HOUSES.

Poinsettias.—As the bracts of these fail the plants needed for stock should be given careful treatment afterwards. Do not transfer them at once from a warm to a cold structure, but remove them gradually, and with the same care diminish the supply of water until it will be safe to keep them perfectly dry and cool. Plants that are doing duty in the conservatory will need no more water than will keep their foliage fresh; these when the bracts fail will do very well in cool quarters.

Euphorbia jacquiniæflora.—Plants that have flowered in the stove need also the same careful treatment. They are liable to suffer if kept too wet or suddenly kept too dry. These after flowering should not be placed in too low a temperature; after they have been gradually hardened and can be kept dry, they will be perfectly safe in a temperature of 50°. However beautiful these may be while in flower in the stove, they are much more useful in the conservatory where the temperature is not allowed to fall much below 50°, they also last double the length of time. Where nearly all flowering plants have to be employed in this structure there is a tendency to stiffness at this season of the year unless such light graceful plants as the one under notice are grown in quantity and utilised for standing well above plants of a dwarf compact nature. By the aid of Poinsettias, Euphorbias, late Calanthes, and plenty of *Centropogon Lucyanus* formal arrangements need not exist. Some care is necessary in removing the latter from heated to cooler structures, or else its foliage turns yellow and quickly disfigures its appearance. Plants that have produced in the stove their terminal truss may be bent round four or five small stakes, when they will soon break into growth and flower again.

Justicia flaricoma.—Plants that may have flowered should not be thrown away; if they are retained they will flower again, and in a short time will produce better plumes than they did at first. In all gardens where effective arrangements are needed during the first four months of the year this plant should be grown in quantity on a single stem in 5-inch pots.

Linum trigynum.—Those having flowered should be cut well back. It is not necessary to retain many plants for stock. Those that are retained, if they have been infested with red spider, should be thoroughly cleaned. The best means is to remove all the foliage and sponge their stems with a strong solution of an insecticide. Plumbagos may also be cut back. The foliage should not be removed from this plant. Its greatest enemy is thrip, which can readily be destroyed by dipping in a solution of tobacco water.

Coleus and Tradescantias.—Both these are useful in small pots for various purposes of decoration. The latter will root quickly and freely enough in any heated structure, while the former should not be in a lower temperature than 65°. They strike freely enough inserted in the pots from which they are to be used if stood on a shelf over a hot water pipe. They should be kept moderately moist.

Selaginella Kraussiana.—This is most useful in from 3 to 5-inch pots for a variety of purposes. Fill pots with light soil in which plenty of fine leaf soil has been incorporated well above the rim, and prick thickly into them growing ends of plants that have been reserved for this purpose. If placed in a warm moist house they will quickly root and cover the surface. It is a good plan to make up a few pots according to the demand, at intervals of a fortnight.

Polystichum proliferum.—A useful Fern in any size pots up to those 5 or 6 inches in diameter. We find it most useful in 4-inch pots. Plants placed in these in autumn and have been kept cool, may be introduced into a temperature of 50° to 55°. Remove the old foliage and plant a little *Selaginella* round the crown, and they will soon push up new fronds, and in a few weeks be ready for any form of decoration. Some in small pots to replace these may be placed into large, and *Selaginella* dibbled in at the same time, not too thickly, or it outgrows the plant when they are first potted. These will do capitally in a Peach house or vinery that has been started, in fact in almost any position until they begin to grow.

Adiantum cuneatum.—Where all the fronds have been gathered that are of any service, the old plants may be cut over, and if slugs have infested them they should be well dusted with soot. Place these plants in a temperature of 40° for a few weeks to rest. Be careful not to overwater plants that have just started into growth; for these a temperature of 60° will be ample, while those with abundance of fully developed fronds should have a temperature 5° lower. Any plants that display signs of growing should have fronds that are ready for cutting removed to give the young ones a chance, and should be encouraged to grow. Fern fronds will be less plentiful during the next two months than what they are now, unless ample provision has been made to maintain a supply.

THE BEE-KEEPER

NOTES ON BEES.

GLASS SECTIONS.

"A SUSSEX AMATEUR" asks for information regarding the using of tin for holding glass sections together. Many years ago I had a fancy for making tin and zinc corner pieces for holding squares of glass together. These were used for the protection of flowers, for striking cuttings under, and for the protection of tender seeds and plants in spring or autumn, as well as for holding small supers of glass together when on the hive. These were not for myself alone, I occasionally sold them to others. The advantages were that when not in use they were easily taken to pieces and stored. The disadvantage was that they only held together when there was no draw upon the glass. I think then that tin fasteners or corners are ambiguous terms, and cannot be binding unless they are of a special make or form. If these are new then the patentee must be protected, but if not any person may make without the fear of prosecution.

FEEDERS.

These are numerous and have been explained often, so that it might appear nothing more need be added nor another wanted. At page 453 I mentioned two superior and useful feeders; the one I am about to mention now is on the same principle, but is more serviceable for work at the Heather. It sometimes happens that bees at the moors for want of fine weather become decimated, so that when fine weather comes there are not bees enough to gather much honey, whereas by timely feeding the bees would have been all alive and much honey secured. Top feeders are of no use at the Heather. A good bottom feeder, and for all purposes is a tin, square in shape, and large enough to hold from 2 to 4 lbs. of sugar after it is dissolved. Any amateur who can handle a soldering bolt can make them easily enough, and at an outlay of 3d. or 4d. each. A tin scoop about 2 inches broad and not more than three-eighths of an inch deep, which may be left permanently in the hive. This should be covered at the outer end to the extent of the size of the fountain, and a hole pierced in it sufficient to admit the neck of the fountain, which is a brass screw, such as is used for oil cans about an inch in diameter. A hole about an eighth of an inch in diameter is drilled right in the centre, and counter sunk on the upper side, or it may be flat; a screw nail let into this acts as a valve, and a bend or a small nut on the other prevents it falling out. It need not be more than 1 inch long. This is the part I have never before described, the valve never gets out of order, and by using so large a screw it is easily filled or emptied. Of course a pane of glass improves it but costs more. Its usefulness consists in addition to being an all-round good feeder is an indispensable one for feeding bees when at the Heather, and bee-keepers studying their own interests should include one for every hive in their winter's work.

USEFUL SUBSTANCES.

Petroleum is useful in many ways about the apiary, removing paint and grease, and for lubricating rusty hinges.

Turpentine is fatal to moths, and as it volatilises readily, hives and supers containing comb should have some of it applied. It is not the hives and combs alone that suffer, but every woollen or fur garment is very soon rendered useless by their depredations if allowed to increase unchecked, so that no pains should be spared to exterminate the pests.

Carbolic acid should be frequently used on all bee appliances, and good follows if combs to be used in stock hives get a slight sprinkling and kept close for some time after.

OIL CLOTHS.

Cotton cloth steeped in boiled linseed oil makes a pliable and light but effective covering for bees at the Heather, as well as for surplus stocks at home. Sew several plies of cloth at each corner, then put in a brass ring, steep in oil, then drip, and stretch out to dry. A few subsequent dressings with a cloth or brush add

to its closeness. As these when new are sticky they should be prepared long before wanted. Do not use any paint, nothing but oil.

FOUNDATION.

Procure this and all supers and frames fitted with it during winter. A word of caution as to its use. Many bee-keepers fill sections and supers with it, which gives a greater quantity of honey, but of inferior quality. Those who go in for quantity use full sheets, and have to be contented with a lesser price, while those who go in for quality can easily dispose of it, in the face of a glutted market too, and at a higher figure. The latter are those who are really creating a desire for honey amongst the million, which will result in more profit. The former may be causing more sensation, but are shutting the door against future profits.

DRIFT HONEY.

Although black combs are not seen, when drained from them is often sickening, and as the people become learned to the right flavour will reject such. A coloured super gives quite a good sample of drift honey, but if bees were managed as they should be it would be the exception and not the rule, as it still is in many quarters.

Honey drift from long-bred-in combs should not be offered for sale as a first-class article, but as an inferior sample, and labelled as such. Some people contend that storing honey in bred-in combs does not affect the flavour, but it does so, to a very great extent too. Honey soon becomes spoiled if stored in a damp place or exposed to the air, or to a great heat to prevent granulation. I drew the attention of one bee-keeper to this lately who stored fine honey in a damp milk house, which has spoiled it greatly. On my suggestion he has put up a wooden erection where it will be free from damp or atmospheric influence.—A. LANARKSHIRE BEE-KEEPER.

GLASS SECTIONS—PATENT RIGHTS.

WELL done Mr. Editor for (on page 518) putting temptation out of our way. We have been longing to see the great discovery of "A Hallamshire Bee-keeper." From the letter that appeared from him some months ago, many were led to believe they were going to be shown the way how to make these glass sections themselves at the trifling cost of 10s. per 1000. Families might thus employ themselves during winter evenings, and the tools were to cost a trifle; but alas! we are disappointed. Why didn't "A Hallamshire Bee-keeper" tell us plainly at first of his intentions? But for the Editor we might have been led into a trap. Your correspondent has a right to enjoy the fruit of his labour and to patent what he can, and I hope all the friends of the bee wish him success. For some months past I have been trying to think out some plan for making glass sections, and have at last succeeded. I have been at a great disadvantage, having never seen a glass section. I have made two patterns, they are put together very soon without tin and at very little cost. I will try them next summer and if they turn out as I expect, I want them for exhibition purposes, and will then let the readers of this Journal know more about them.—A. HOWDENSHERE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

To Inquirers and Correspondents.—In consequence of the necessity of making up the pages of the present issue of this Journal several days in advance in view of Christmastide, answers to some letters must be deferred to a future issue.

Stocks (Moss Rose).—If you send us a stamped directed envelope the information you require will be supplied.

Celery Decaying (J. H.).—If the whole of your Celery is like the sample sent it is next to worthless. It was impossible to have anticipated its condition. The leaflets as they push from the flower stem into wet and possibly heavy soil are almost certain to perish, as in the example. There is no means of checking the evil, and the only

certain method of prevention is to prevent the plants "bolting" by care in preparation and after management. The one sent appears to have been drawn too much before it was planted. We have not one bolted plant out of a thousand.

Mealy Bug on Vines (*A. Young Gardener*).—Whether you add tan to the mixture or not for "filling up the cracks" in the Vines you will not eradicate the pest by dressing the rods alone. Remove all loose and scaly bark, then apply the softsoap solution with a wine-glassful of petroleum added, brushing in it vigorously at a temperature of 130°; indeed, give the rods a thorough good scrubbing, and if the work is done well not an insect will remain alive. But that is only a small part of what needs to be done. Every part of the house must be cleansed, roof, wires, walls, stages, especially the part usually unseen, for the insects lurk in all sorts of unlikely places—in bits of matting, the under sides of stages, fissures in walls or woodwork, in the soil near hot water pipes, among the drainage in flower pots—in fact they may be the most numerous where you least expect to find them. If there are plants in the house every one must be cleansed, and if there is an inside Vine border the surface must be removed and fresh soil added; in short everything you can think of should be done for destroying the insidious enemy. Then in spring a watchful eye must be kept for insects that may have escaped your vigilance, promptly destroying every one you see, or the Vines will soon be infested again.

Winter Heaths (*C. S.*).—Such Heaths as *Erica hyemalis*, *E. autumnalis*, and others that have flowered early and are past their best for decoration, should be cut close back if they are intended to be utilised for the same purpose another autumn. If they have been in structures where heat has been maintained, they should not be placed direct into the cold greenhouse or they will be seriously checked. They should be gradually hardened to greenhouse treatment, so that they will start into growth slowly but naturally. Plants that have long been in rooms for decoration are useless for growing another year. All plants employed for such purposes are better conveyed to the rubbish heap as soon as they are removed, for they are not worth the trouble necessary to restore them to health. Young plants in small pots that are intended for flowering another year must be kept in a light position and as cool as possible, so that they will not be excited into growth. Any plants that did not show flowers and are dwarf and bushy should be subjected to the same treatment. These plants should be watered carefully, taking care never to allow them to suffer by an insufficient supply.

Gleichenia Culture (*W. W.*).—They require to be grown in rough peat, torn in pieces with the hand and the finer particles rejected. Brown fibrous peat is the most suitable. Good drainage is necessary, and deep pans will answer quite as well as pots, they not being deep-rooting plants. The plants should be potted when they begin to grow, or early in March, and the soil removed without injuring the roots. To the soil, before potting, add about a sixth of charcoal broken small, and a similar quantity of crystal sand. Work the soil in carefully amongst the roots, keeping the rhizomes well up, and potting moderately firm. Water thoroughly, so as to settle the soil about them, and do not water again until it is necessary, but before the plants are distressed by want of it, then giving a thorough supply. They are best in a light position, with just sufficient shade in very bright weather to prevent scorching, and should have a rather free amount of air, as they do not flourish in the close moist atmosphere of ordinary ferneries. A moderate amount of moisture only is necessary, and water should be sprinkled on the fronds. They require a temperature of 45° to 50° in winter, and 55° to 65° in spring by artificial means, and 10° to 15° rise from sun heat. The summer temperature will range 60° to 65° at night, and proportionately higher in the daytime. The chief things are an open free soil, free ventilation, and not too much water either at the roots or in the atmosphere.

The Common Holly, *Ilex aquifolium* (*X. M.*).—This is a native of the woods and forests of Britain; and its numerous varieties of gold and silver-blotched, entire, notched, serrated, ciliated, bristly, broad, narrow, and thick-leaved, and yellow-berried, are beautiful ornamental trees in parks and shrubberies; and especially in winter, when covered with a profusion of bright scarlet berries, a large Holly tree is perhaps the queen of the woodland. For a fence there is no better tree than the Holly. It never suffers from the severest winter; it is always green, strong, and impenetrable, and it is easily kept in order. The leaves are mucous, bitter, and astringent, with an austere taste; they were formerly used as a diaphoretic, and, in infusion, were considered beneficial in catarrh, pleurisy, small-pox, and gout. A few years ago they were highly extolled in France as a cure for intermittents, and were considered equal to Peruvian bark, their febrifuge virtues being said to depend on a bitter principle called ilicin. The berries are powerfully purgative, and also an emetic and diuretic; ten or twelve will act on the bowels. The expressed juice has been used in jaundice. From the bark the substance called bird-lime is obtained, by boiling it for some hours in water, till the green part separates from the white; then laying it in a cool cellar for some days; afterwards pounding it till it becomes a tough paste, washing it frequently till it becomes clear, and then placing it in an earthen vessel to ferment or become fine, when it will be fit for use. The wood is hard, with a fine grain, and a colour almost as white as ivory, except at the heart of old trees, where it is brown; it is capable of receiving a high polish, and is readily stained of any colour, but the most common is black in imitation of ebony. It is much used for inlaying and cabinet work, and it forms a considerable ingredient in Tonbridge-ware; it also forms handles to knives, and has even been used for wood engraving.

Present Treatment of Cyclamens (*R. M. S.*).—Plants that have been kept cool up to the present time, and are wanted in flower, should be introduced to some structure where the temperature can be maintained at 50° to 55°. They should be arranged as near to the glass as possible, or the flower stems will become tall and weakly. Free ventilation should be given on all favourable occasions. Weak stimulants may be applied to these as well as later batches that are to remain under cool treatment for some time longer. Young stock in small pots should be kept slowly growing, and if they have been subjected to cool treatment they will do this in a night temperature of 45°. They must be near to the glass to keep their foliage dwarf and sturdy. Take care that plants in small pots do not suffer by the want of water, and on the other hand the soil must not be saturated. Watch for aphides, and if they appear on the under side of the foliage destroy them at once, either by fumigating with tobacco or dipping them in a solution of tobacco water. For a stock of flowering plants another year seed should be sown at once. A pot or pan may be prepared, according to the quantity of seeds to be sown, by draining it thoroughly, and then nearly filling it with light soil that has been passed through a fine sieve; a suitable compost is equal parts of loam and leaf soil with a liberal addition of sand. Sow the seed evenly upon the surface and just covered with fine leaf soil. If the soil is in a proper state of moisture no water will be needed for at least a week after sowing, if the pan is plunged in a heated structure and covered with a square of glass. Care must be taken to avoid the soil becoming dry after the seed is sown. After the seedlings appear above the soil they should be gradually exposed to the light and grown close to the glass.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*H. P. W.*).—The Apple is Winter Majetin.

COVENT GARDEN MARKET.—DECEMBER 23RD. FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	2	0 to 6	Oranges, per 100	4	0 to 9
" Nova Scotia and	0	0	Peaches, dozen	0	0
" Canada, per barrel 12	0	20	Plums, $\frac{1}{2}$ sieve	0	0
Cherries, $\frac{1}{2}$ sieve	0	0	Red Currants, per $\frac{1}{2}$ -sieve	0	0
Grapes, per lb.	1	0	Black	0	0
Lemons, case	10	0	St. Michael Pines, each	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	4	0 to 5	Leeks, bunch	0	2 to 0
Asparagus, bundle	0	0	Lettuce, dozen	0	9
Beans, Kidney, per lb. ..	0	6	Mushrooms, punnet ..	1	6
Beet, Red, dozen	1	0	Mustard & Cress, punnet	0	2
Broccoli, bundle	0	0	Onions, bushel	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	8	Parsley, dozen bunches	2	0
Cabbage, dozen	1	0	Peas, per dozen	1	0
Capoteams, per 100	0	0	Potatoes, per cwt.	3	0
Carrots, bunch	0	4	Rhubarb, bundle	0	2
Caniflowers, dozen	2	0	Salsify, bundle	1	0
Celery, bundle	1	0	Scorzonera, bundle ..	1	6
Coleworts, doz. bunches	2	0	Shallots, per lb.	0	8
Cucumbers, each	0	3	Spinach, bushel	1	0
Endive, dozen	1	0	Tomatoes, per lb.	0	6
Herbs, bunch	0	2	Turips, bunch	0	4

CUT FLOWERS:

	s. d.	s. d.		s. d.	s. d.
Aran Lilies, 12 blooms ..	4	0 to 9	Maidenhair Fern, doz.	4	0 to 9
Asters, per bunch, French	0	0	bunches	2	0
Azalea, dozen sprays ..	0	9	Mignonette, 12 bunches	2	0
Bouvardia, bunch	0	6	" Fr., large bunch	1	6
Camellias, dozen blooms	1	6	Narcissus (Paper-white),	1	0
Carnations, 12 blooms ..	1	0	dozen sprays	1	0
Christmas Roses, 12 blms.	1	0	" French, 12 bunches	4	0
Chrysanthemums, dozen	0	6	Felargoniums, 12 trusses	1	0
bunches	6	0	" scarlet, 12 bunches	6	0
Epiphyllum, doz. blooms	0	6	Primula (double) 12 sprays	1	0
Encharis, dozen	4	0	" (single) 12 sprays	0	9
Gardenias, 12 blooms ..	4	0	Roses (Indoor), dozen ..	1	6
Gladiolus (various) dozen	0	0	" Red	0	0
sprays	0	0	" 12 blooms	1	6
Hyacinths (Roman) dozen	0	6	" Tea, white, dozen ..	1	0
sprays	0	6	" Yellow	2	0
Lapageria, 12 blooms ..	2	0	" French, per bunch ..	2	0
Lilium, various, 12 blms	2	0	Spiraea, dozen bunches	9	0
Lilium longilicorum, 12	0	6	Stephanotis, doz. sprays	0	0
blooms	9	6	Sweet Peas, doz. bunches	0	0
Lily of the Valley, dozen	1	6	Tuberose, 12 blooms ..	1	6
sprays	1	6	Violets, dozen bunches	1	0
Marguerites, 12 bunches	2	0	" French, per bunch	2	0
	6	0	" Parme, per bunch	4	0
			White Lilac, Fr., per bunch	6	0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	Feuclastica, each	1	8 to 7
Aran Lilies, per dozen ..	12	0	Foliage plants, var., each	2	0
Arborvitae (golden) dozen	6	0	Hyacinths, 12 pots	9	0
Azalea, various, per doz.	30	0	" (Roman) 12 pots ..	9	0
Begonias, various, per doz	4	0	Lily of the Valley, 12 pots	24	0
Balsams, per dozen ..	0	0	Marguerite Daisy, dozen	6	0
Caladiums, per doz.	0	0	Mignonette, per dozen ..	0	0
Christmas Rose	0	0	Musk, per dozen	0	0
Chrysanthemums, dozen	6	0	Myrtles, dozen	6	0
Dracaena terminalis, doz.	24	0	Palms, in var., each ..	2	6
Dracaena viridis, doz. ..	12	0	Primula (single) per doz.	4	0
Epiphyllum, per doz.	12	0	Rhodanthe, per dozen ..	0	0
Erica, various, dozen ..	12	0	Saxifraga pyramidalis,		
Eucalyptus, var., dozen	6	0	per dozen	0	0
Evergreen, in var., dozen	6	0	Solanums, per dozen ..	6	0
Ferns, in variety, dozen	4	0	Tulips, 12 pots	8	0



CHRISTMAS CATTLE.

RIGHT royally has Her Majesty the Queen done credit to her position as a model farmer and as President for the year of the Royal Agricultural Society of England in the recent exhibitions of Christmas cattle at Birmingham and at Smithfield. At Birmingham there were eight animals entered for competition from the royal farms, with which Her Majesty won four first prizes, three second prizes, two high commendations, a reserve, the two breed championships for Herefords and Shorthorns, as well as the championships for the whole Show. At Smithfield even more remarkable results were achieved. Thirteen animals were entered, with which Her Majesty gained six first, two second, and three third prizes, the Shorthorn breed cup, the best ox or steer cup, and the champion prize for the best beast in the Show. The royal champion ox is a Shorthorn, about forty-three months old, and its weight is 23 cwt. 17 lbs. Seen alone it would doubtless impress one more than it did as we saw it at Islington. It is undoubtedly a grand animal of very noble proportions, but its age was against it, and the Judges were a long while in coming to a decision both at Birmingham and Smithfield, its rival at both Shows being Mr. Clement Stephenson's polled Aberdeen Angus heifer, weighing under 14 cwt., but nevertheless a beast of superb quality, which no doubt told with the Judges much more than mere size would do. Anyhow, it is one more triumph for the Shorthorns, or rather a double victory. Even our favourite Devons were beaten by the royal champion in the contest for the £50 cup for the steer or ox, which lay between it and the Devon steer of Mr. John Wortley at Islington.

It must not be thought that undue preference is given to Shorthorns at the royal farms. On the contrary, most of the leading breeds find a place there, and the highest price realised at Her Majesty's fat stock sale on the 7th inst. was £71 for a Devon, and £60 for a Hereford. Of the Devons it may be said that they compare favourably with other breeds in quality, and are decidedly superior to the Sussex, which bear some resemblance to them. Certainly Devon beef is in high favour at the present time in the metropolitan district, and it is the boast of many a suburban butcher that he "kills" no other beef.

The great Christmas market at Islington on the 16th inst. had a total number of 5000 beasts and 11,000 sheep, or about 2000 less beasts and a thousand less sheep than were shown at the same market last year. This falling off in numbers was attributed to the fact of an over-supply which led to a serious reduction in prices last Christmas. As usual at this particular "great day," as it is termed, when close attention is paid to quality, Devons and Scotch took the lead as being in prime condition and not over-fat. Prices were considered to rule somewhat better than last year, but it cannot be said that there was any marked advance.

Butchers' and salesmen's requirements appear to have more attention paid to them than formerly. Dear-bought experience has long shown both graziers and butchers that an over-fat beast is unprofitable, and the rule holds good in reference to all animals. The best pigs for the London market are nice little porkers of an average weight of 50 lbs., and only moderately fat; yet it is notorious that there are thousands of pigs sent to London every year at a loss simply through overfeeding. At the Ipswich Show of the Suffolk Fat Cattle Club on the 16th inst. Mr. Robert Seager, who claims to be the largest buyer of pigs in the eastern counties, said some years ago he was obliged to send to the West of England for his supplies because he could not obtain near at home animals lean enough. Suffolk pigs at that time were very much too fat. He had not to send away for supplies now, but he had to be very careful in selecting them. He asked breeders to remember that the market price for fat pork now was not 3d. a

pound, while lean pork was worth 6d. or 7d. a pound. That made a great deal of difference to the breeders. Last week he had a supply, and they were too fat, so he sent half of the meat to London, because that was the only place to dispose of fat meat. The fat meat brought him 2½d. a pound, while the lean parts brought 7d. a pound.

At this Show, the champion beast was Mr. J. J. Coleman's Red Poll, which won three champion prizes as best of the Red Polls, best ox or steer, and best beast in the Show. This grand beast was also champion at the Norwich Show, and a prizewinner at Smithfield. Animals of other pure and cross-breeds were well shown, and it was a veritable triumph for the Red Polls that the breed won the championship in its own district, where it was boldly challenged by the older and more famous Polled Angus breed. A novel and admirable feature of this Show was the contest for special prizes offered by local landlords to tenants on their estates both for cattle and sheep.

WORK ON THE HOME FARM.

Farm work at midwinter is often much curtailed by broken weather, to which of late years has been added the stress of hard times, which has made so many families reduce the labour staff as much as possible every winter. Much as we regret this, it cannot, in common fairness, be expected that employment for farm labourers is to be found from purely philanthropic motives, yet it is clearly worth while seeing if more work may not be done upon farms generally in winter, without loss to the farmer at any rate. Taking corn-threshing, for example; time was when from every barn came the sound of the flail at this season of the year, and the labourer was quite assured of regular employment. The threshing machine has robbed him of much of this work, but we think the flails might still be kept going, to the mutual advantage of master and man, by paying for the threshing by the sack of corn threshed and screened ready for market. The men would earn enough for the maintenance of themselves and their families, the masters would have the unquestionable advantage of retaining the services of steady reliable men, the exodus of farm labourers to towns would cease in a great measure, and thus the best men would not be lost off the land.

Another point, too, bearing upon this important matter is the establishment of some kind of motive power at every large farm for the grinding or crushing of corn, cake, and other foods, as well as chaff cutting, root slicing and pulping, water pumping, and similar work. Horses, at any rate, may often be turned to account for such work, if only there is proper shelter for horses and gearing in the form of a roofed structure with boarded sides. This renders the farmer independent of the miller, and saves much time in sending to mills. The kindly doctrine of live and let live holds good here despite of what may be said of the miller's loss, for surely the farmer's own men claim his consideration first of all, and they will certainly have it when it so clearly accords with his interests. What is much wanted for farmers is a cheap engine, driven either by petroleum or steam, of say two-horse power, the price of which would be well within the scope of an ordinary farmer's means. We quite think the sale for such a motor would be very large, for sure we are that a hundred of them would be sold where one of the present costly engines now finds purchasers.

STORING SWEDES.—A correspondent of the *Aberdeen Free Press* describes a method of preserving Swedes, which, he says, has been a little more or less satisfactory according to the severity of the winter and has been practised in England for over half a century. It consists of drawing the Swedes by hand, and piling them into conical heaps of a large cartload each, just as they are drawn out of the ground, care being taken that the outside ones are dropped around, so that the leaves of them hang down to form a kind of thatch for receiving the earth with which they are subsequently covered. A man can easily grasp four or six in each hand according to the size of the roots. They should be dropped as much in a bunch as possible that the starting ring may be well defined. Then the Swedes nearest the ring should be thrown into it till the centre is well raised above the top of the first ring. This will admit of the second outside ring or circular layer being so formed that the necks of the roots used for it will have a downward slope, and the leaves, therefore, fall close down for forming the kind of thatch mentioned. So the heaping may be continued till the top has been formed into a sugar-loaf end. The only other care required in forming these heaps is to have the height so proportionate to the width of the bottom that the earth, which should be 4 inches deep, may not slip off after a sharp frost.

AGRICULTURAL GRANT FOR ABERDEEN.—We learn that the Board of Agriculture has intimated a grant of £300, from the sum voted by Parliament in support of agricultural education, to Mr. Thos. Jamieson, Aberdeen, in connection with the work which he is presently doing in that city and county. Of this sum £200 is for education, the balance of £100 being in aid of the agricultural research station. Last year only £50 was granted to the latter, and £100 in support of education, so that the grants have both been doubled this year. This is a tangible recognition of Mr. Jamieson's valuable services to the cause of agricultural science, which will be much appreciated by his many friends and admirers.

